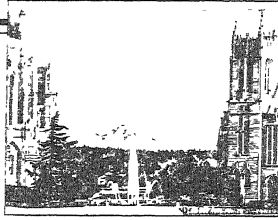


CONSUMER BEHAVIOR

**Research
on
Consumer
Reactions**

**EDITED BY
LINCOLN H. CLARK**



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CONSUMER BEHAVIOR

RESEARCH ON CONSUMER REACTIONS

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Preface

What does the consumer want? When does he want it? What is he willing to pay for it?

The reports compiled in this volume interpret the findings of many studies of the purchaser—studies that have answered some questions. But they have also posed others that cannot be answered without still more information.

“Consumer Reaction to Product Innovation,” by Wroe Alderson, discusses eight purchase situations in which the reasons for buying range from the need to restock to the desire for distinction or conformity. Four of the eight deal with innovations: replacing an unsatisfactory product, supplementing a satisfactory one, acquiring a product not previously owned, and adding two new products in conjunction with each other. In concluding his discussion Mr. Alderson cites the Soviet Union, where innovation at the consumer level has been rigidly minimized in favor of massive technology. Will this curtailment create massive popular apathy to innovation at consumer level? In contrast, the United States suggests the possibility of attaining maximum acceptance of material innovation. At the same time it raises the question of whether material innovation may presently saturate our capacity for acceptance.

Roger Girod adds some comments on the value of permanency, emphasizing the paradox of the permanent American addition to change. He summarizes the values of studies in consumer behavior particularly brought out by Mr. Alderson, and he proposes further investigation in the area of needs as related to social environment.

In “The Desire for Innovations in Household Goods” Eva Mueller considers the acceptance of innovations and expanding volumes of consumption. In eighteen clearly arranged tables of findings of the Survey Research Center she shows that one cause of innovation-mindedness is the stimulus of technological progress; also that it becomes active (1) when standard household equipment has been obtained, (2) when the consumer’s financial situation is satisfactory and improving, (3) when buying conditions seem favorable. Her study is based on four standard pieces of household equipment subject to probable new modifications and on five newer appliances not yet classifiable as standard equipment.

Ernst A. Dauer, in his comment on Miss Mueller’s paper, makes clear that as an economist studying consumer credit he is interested in the same families, the same wants and needs, the same time payments linking innovation and customer.

PREFACE

More and broader research, he believes, may confirm the extent of the desire for innovations, with a resultant stabilizing effect on the long-range economy.

The fickleness and unpredictableness of the consumer are analyzed by A. C. Nielsen, Jr. Research in the Du Pont organization, he says, finds but one in twenty of its technically sound products successful, and industry in general succeeds with only one in every three products launched. Moreover, adequate launching of a product may take years. Mr. Nielsen summarizes the function of market research, the contributions it has made, the additional tasks that devolve on it, and the problems of the manufacturer in relation to his potential market.

Professor Phelps, in his commentary on Mr. Nielsen's paper, introduces the surmise that some product innovation may represent mere bafflement and uncertainty on the part of the manufacturer. Business executives, he believes, know too little about the consumer; more discussions, more research, more guidance are imperative.

Samuel A. Stouffer deals with "Sociological Factors Favoring Innovations"—ideologic, geographic, and technological factors—and with purchasing power as based on productivity. His view, presented with charm and wit, is broadly optimistic. Mr. Eggert of the Ford Motor Company and Professor Schweiger of the University of Chicago add other favoring factors: the reward of the successful entrepreneur, the vigor of our increasing population, our resources, the influence of conformism.

Alfred Politz illustrates "Product Changes and Consumer Reactions" with a beverage, a gasoline, and an automobile, demonstrating what consumer research contributed to each. The story of the automobile is carried on by David Riesman and Eric Larrabee in "Autos in America: Manifest and Latent Destinies," with due attention to the swank of the motor car, its vulgarity, its eccentricities of design, its development, and above all its present and probable future place in American life.

A noteworthy contribution is the paper by Professor James Morgan, "A Review of Recent Research on Consumer Behavior," with bibliography. The survey covers not only material already published, but also information about projected publications and details about the several divisions of the subject.

The papers in Part Two were selected from those presented at the Conference on Consumption and Economic Development at Princeton, New Jersey, in 1955. Mrs. Ruth Mack of the National Bureau of Economic Research has contributed an introductory article for this section. Special acknowledgment is due the National Bureau of Economic Research for underwriting part of the cost of publication.

This is the third volume issued by Consumer Behavior, Incorporated, a nonprofit organization established by a group of social scientists to promote research on consumer behavior toward the end of increasing our ability to predict what consumers will do. At present the major project of Consumer Behavior, Incorporated, is a study of techniques for the measurement of household savings that is being financed by a grant from the Ford Foundation. The findings will be presented in a future volume.

LINCOLN H. CLARK

New York University
April, 1958

PART ONE

CONSUMER REACTION TO PRODUCT INNOVATION

Wroe Alderson

The process of innovation in product design, production methods, and economic organization has been discussed by Schumpeter, Barnett, and others. Less attention has been given to the process of acceptance of innovation by consumers. The general problem of how culture patterns change is, of course, a central topic for anthropology. One conclusion of the anthropologist is that any new culture trait available to a group must make its way in terms of fitting into the existing pattern and in the face of substantial resistance against any change at all. In marketing, much that is discussed under the general heading of motivation research is actually a study of the whole psychological process by which new products or product variations can gain acceptance by consumers.

The degree of novelty in a so-called innovation can vary from an almost imperceptible variation in a product to a startling and unmistakable break with the past. Toothpaste with a new ingredient more effective in whitening teeth would be an example of the first. Firearms when first offered to the American Indian would illustrate the second.

An attempt to define innovation will be useful here as a means of identifying the types or degrees of change to which the consumer may be asked to react.

The goods presently owned or used by any society or group might be called its cultural inventory. Assuming a very simple inventory for purposes of illustration, it might be designated by the twenty-four letters $a \dots x$. Each person in the group would hold an assortment of goods which would constitute a subset of $a \dots x$. This assortment serves to equip the individual for future action and is related to the principal contingencies he can foresee as requiring action. Each person may be aware of other items in the inventory $a \dots x$ not now included in the subset, but acceptable in case of need. The items he already holds plus these known and acceptable items might be called the extended subset. For an item to qualify as part of the cultural inventory $a \dots x$, it should be included in the basic assortments of more than one person. To qualify as an accepted innovation, it should represent an addition to $a \dots x$ and not merely to the subset

or extended subset of a single individual. Cultural innovation is, on the other hand, the cumulative effect of the psychological reactions of individuals.

Eight different purchase situations will now be specified, some of which move in the direction of innovation. Symbols will be used in an attempt to make these formulations as precise as possible. The sign $\rightarrow$ as used here may be read "implies that." The first letter in each statement represents the item purchased. Thus the first shorthand statement below means that the purchase of x implies or was brought about by the fact that the stock of x in the subset _{i} was depleted.

Occasions for Purchase

1. $x \rightarrow x$ depleted (custom or special need)
2. $w \rightarrow x$ palled (variety)
3. $y \rightarrow x$ failed (improved product)
4. $z \rightarrow x$ incomplete (simple complement)
5. $y \rightarrow$ extended subset $a \dots x$ incomplete (preparing for new contingency)
6. $y + z \rightarrow$ extended subset $a \dots x$ incomplete (new contingency requiring complementary products)
7. $y_L \rightarrow y$ is not a member of subsets _{jkl} (desire for distinction)
8. $y_F \rightarrow y$ is a member of subsets _{jkl} (desire for conformity)

The advantage of such formulations is that they provide a sharp contrast between the essential elements of one situation and another. The relation of each occasion of purchase to innovation will now be discussed.

Obviously the first two occasions are not innovative at all. In the first instance the individual has been using x and replenishes his stock when he runs out of x . In the second case he gets tired of

x , at least temporarily, and replaces it with w , which is already part of the cultural inventory $a \dots x$. Conceivably the desire for variety could sometimes help to support a true innovation. One of the borderline cases would be fashion goods. A simple desire for variety as compared to seeking distinction would be better illustrated by a switch from strawberries to peaches or from white potatoes to sweet potatoes.

The next four items in the list are clearly related to innovation. In case 3 a new product is tried because the product now used for the same purpose has proved unsatisfactory. In case 4 a supplementary product is used in the hope of making the original product work better. Simple illustrations would be the use of a new grade of gasoline on the one hand and the use of a petroleum additive on the other. In either case the end remains the same and the innovation lies in endeavoring to improve the means.

The next two cases, 5 and 6, imply some reshaping of the ends sought by the individual. In these cases he is willing to try something outside the inventory $a \dots x$ and therefore outside that part of the inventory that is familiar to him, namely, the extended subset _{i} . The two cases differ in relative complexity since in case 5 the individual is asked to accept a single new product, while in case 6 the innovation consists in using two new products in conjunction. It may be assumed that the inventory $a \dots x$ contains all the items that members of this society regard as necessary to meet the needs for future action as now contemplated. To accept items outside $a \dots x$ is equivalent to recognizing contingencies previously overlooked or neglected.

CONSUMER REACTION TO PRODUCT INNOVATION

The last two cases, 7 and 8, have an important bearing on the acceptance of innovation but reflect socially involved motivations rather than technical requirements. The subscripts L and F refer to leader and follower and characterize the type of person who is purchasing y in each case. For the leader y has an extra appeal if no one else yet has it because it contributes to his prestige. In the case of a technically new product he may be the first to try it because he has the most knowledge of the special field. The follower may be moved by prestige feelings in buying a new product to match what others may already have. He may also feel safer in buying a product that others have found satisfactory even though he is not able to evaluate its technical properties. Leadership and followership are essential elements in the dynamics of demand. This does not necessarily mean a sharp division of the population into two groups, since some may lead in one class of products and some in another.

It is now time to turn to another aspect of innovation, the features on the product side that enable it to gain acceptance and to persist as an item in the cultural inventory. There is a useful analogy here to the filling of ecological niches by animal species. The modern theory of evolution holds that species arise in response to opportunity. Mutations occur and are selected for survival according to whether or not they fit into the existing pattern. Many variations fail because they do not fit in or because they are not large enough or significant enough to challenge the present incumbents of the ecological network.

The ecology of products is radically different in character since products are

not organisms but instrumentalities that may affect the survival or satisfaction of human organisms. They do not survive by laws of natural selection, but are selected for survival because they find a place in human minds and living patterns. Because the principles of selection are psychological they depend both on perception of differences in the product itself and on any claims made on behalf of the product as to function and performance. Either product characteristics directly, or claims in behalf of a product arouse expectations. The product may be given a trial on the basis of favorable expectations and be accepted permanently if expectations are realized.

Both the product and the product claims must meet some minimal requirements for acceptance. The difference between the new product offered and the established product must be discernible, identifiable, and reproducible. To say that the difference must be discernible is to say that the innovation must be different enough to make a difference. The innovation must be identifiable if the first purchase is to lead to further purchases by the same individual or by others. A current violation of this principle is the action of a leading detergent manufacturer in bringing out two new products with significantly different qualities. Neither product can make a separate place for itself, since the color and design of the two packages are identical and the moderate difference in package size is easily overlooked by the consumer. The condition of reproducibility is also essential to repeat sales. That means ability to make additional units not noticeably different from the first. Lack of effective quality control has killed

more than one innovation that might otherwise have been accepted.

The conditions of acceptance are even more complicated with respect to product claims. Ideally a claim should be meaningful, plausible, and verifiable, but each of these requirements in turn must be further analyzed. This is true even in the simpler case in which it is claimed that the new product is a better means for effecting an end that is already recognized. The complexities of gaining acceptance are all the greater if the innovator claims that he is offering a means for serving an end or solving a problem of which the consumer was previously unaware. Each of the requirements for a product claim will be discussed, beginning with the requirement that it be meaningful.

A product claim for a new product is an offer to solve a problem for the prospective purchaser. A problem arising from a state of urgency is complicated by uncertainty. The meaning of a product claim is compounded of three elements: the urgency of the contingency the product is designed to meet; the probability of this event occurring; and doubt or reservation as to the utility of the product in meeting this contingency.

Plausibility of claims rests on various grounds. First is pure credulity, which is the willingness to believe what is pleasant to believe. This is a human failing that was exploited more outrageously before the days of the Pure Food and Drug Administration than now.

Another ground of belief is authority. The discriminating consumer is in a large degree the one who exercises critical judgment in the choice of authorities as compared to direct judgment of

product claims. A third ground of belief is scientific proof or what appears to be scientific evidence. There is a growing tendency to seek scientific foundations for claims.

If a new product under consideration by consumers is a more or less direct replacement for something previously known, the item being replaced may serve as a yardstick for evaluating the new one. If test or demonstration serves to verify the claims for the product it may be assumed that there is a favorable net change after taking account of several factors. On the value side is a positive change in performance. The enhancement of value may be increased or decreased by what happens on the cost side. Cost is measured not only by price or investment in the new assets but by expenditure of effort. A change in the time or labor required to use the product may be either favorable or unfavorable. There is also the issue of how much skill is required in the use of the product. There are various ways in which these factors might add up to a net favorable change. For example, an innovation might involve only a moderate improvement in performance with some increase in cost, but with substantial decrease in labor and in the skill required to use it (Bisquick during the depression, for example).

If a product is a radical innovation in the sense that consumers have nothing with which to compare it directly, verification must be related to expectations as created by claims and by general attitude toward claims. This is not essentially different from the other situation except that, in the case of a recognizable replacement, claims are somewhat tied down by the previous product.

With this background it is now pos-

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sible to consider the requirements for acceptance in relation to the principal types of innovative situations, particularly the four cases 3 to 6 in the previous list. As already pointed out, cases 3 and 4 can usually be regarded as offering an improvement in means while 5 and 6 involve the recognition of new ends or new problems to be solved. Cases 4 and 6 also involve the relationship between complementary products as contrasted with the cases with which they are paired, 3 and 5 respectively.

In case 3 of simple product improvement the need for a discernible difference is especially acute. There is no point in making a change from the customary product unless something is to be gained thereby. Reproducibility is also important. For example, the individual cannot readily switch to a kind of food encountered in a foreign country unless it is readily obtainable at home. Claims would be meaningful primarily in terms of utility since the urgency and probability are already established. Plausibility would not be a major problem, since the individual dissatisfied with the present product might be predisposed to believe in the possibility of a better one. Evidence of superiority would usually have to rest on some factual evidence, since the consumer is well acquainted with the existing product. Verifiability of claims would doubtless emphasize money cost as well as improvement in performance. Labor-saving and simplicity requiring less skill are also verifiable attributes likely to be alleged in presenting a product improvement.

Case 4 is not meant to bracket all complementary relations, which are of many kinds. It specifically excludes the

necessary complement such as gasoline for use with an automobile. Case 4 pertains rather to the case where a basic product might work by itself but work better with the complement. The adding of a water softener to a soap is an example. Identifiability is especially important to relate the use of the product to its basic purpose. Claims would also make a greater attempt to convince the consumer of a high probability of the occasion of need. Performance improvement would be emphasized and the sponsor would doubtless rely heavily on the authority of previous users or recognized specialists to substantiate the improvement in performance.

The distinguishing feature of cases 5 and 6 would be the primary reliance on product claims, since the products themselves would be unfamiliar. To make these claims meaningful the sponsor would have to make out a strong case for both the urgency and the probability of the occasions of use. To do this he would call on both available authority and scientific evidence. The net advantage under verifiability would be likely to reside mainly in performance in the sense of a satisfactory solution of a new problem, measured by the expectations that had been aroused. The consumer might have to acquire new skills and would certainly be using time not previously used for the same purpose.

The complementary product offered in case 6 might be either a necessary complement or a facilitating complement. In either case it would complicate the decision to be made by the consumer and would be more likely to require additional skills. It is likely that many innovations in the future will be of this type in which the innovation

consists of more than one product to be accepted at the same time. A new appliance and a product to go with it would be typical. Sometimes the consumable product and the instrument for using it can be combined in an applicator package. If the two are separate, the two product sponsors may still combine their efforts to gain acceptance for the innovation. Until recently, one of the obstacles to the acceptance of automatic dishwashers has been the lack of a washing compound regarded as fully satisfactory for the purpose. The manufacturer who is sure that he has developed one will have a real stake in promoting the sale of dishwashers and will doubtless engage in such activities as demonstrating their successful use to consumers.

Human culture has been extremely conservative throughout the long period studied by anthropologists, beginning with the Old Stone Age. Innovations have come more rapidly since the development of agriculture in about 6000 bc. The subsequent time accounts for about 1 percent of the period of man on earth. One percent of this period in turn takes us back eighty years or about to the time of the invention of the telephone. Life has changed hardly at all during that period in some primitive cultures that still survive. The enormous potentialities for change provided by advancing technology have been partially realized and exemplified by the acceptance of innovation in the United States.

The rate of change and the differences in the rate between communities and between nations pose some of the gravest contemporary problems of social philosophy and public policy. Technical assistance programs in undeveloped

countries have encountered resistance to change as a major problem. In some of the more successful programs, strategies for gaining acceptance for innovation have played an important part. The two most powerful nations in the world present a striking contrast in policies toward innovation in consumer goods. In the United States, economic freedom implies the freedom of the consumer to accept innovation and the freedom of many individuals to promote innovation. These promoters of change include the sponsors of new products and their advertising agencies. Other groups promote innovation on a broader scale by advocating their particular vision of a contemporary way of life. Leading stores and stylists, editors of fashion and service magazines, and many public leaders and educators participate in this generalized propaganda for innovation.

The Soviet Union, by contrast, seems until recently to have been engaged in the experiment of minimizing innovation at the consumer level while its economy was acquiring a massive and dynamic body of technology. Its leaders are now confronted with the possibility that popular apathy may set in if consumers are not given a greater share in the fruits of economic advance. They also face the problem of devising institutions for facilitating the consumer innovation they consider appropriate to their political and economic system. The American way of life, at the other extreme, as to consumer goods innovation, raises some equally difficult and searching questions. Will some maximum rate for the acceptance and digestion of innovation presently be reached, beyond which the flexibility of human psychology and social organization cannot be stretched? Has our concentration

CONSUMER REACTION TO PRODUCT INNOVATION

on innovation in material goods already infringed dangerously on total capacity for accepting new ideas and patterns of behavior in other departments of life? These issues, as well as more immediate practical problems of marketing, underscore the need for a better understanding of the innovative process.

2

COMMENTS ON "CONSUMER REACTION TO PRODUCT INNOVATION"

Roger Girod

My function here is to express the impressions of an outsider—both by the field of specialty and by nationality—about research on consumer reaction to innovation in general and specifically about the paper by Mr. Alderson. Therefore, I will first take the role of the average European facing the American attitude toward innovation as expressed here.

It seems that there is a tendency automatically to associate innovation and progress. This could be confusing. Of course there is no progress without innovation of some kind. But all kinds of innovation are not progress. Certain innovations do not represent improvement, but rather regression. On the other side, permanency is in certain cases just stagnation in a situation that should and could be improved. But on other occasions it is clever preference for patterns that are very well adapted to their functions, and clever resistance against adoption of patterns that are less satisfactory.

Both concepts, innovation and permanency, need detailed criticism with a

thorough knowledge of the concrete situations to which they are related. Let me observe the value of innovation first from the point of view of the welfare of the individuals as personalities, and secondly from the point of view of the welfare of the community, in the framework of an old and highly developed culture. This raises the fundamental question: *Why and for what purpose?* What are the reasons for innovation? Are the objectives proposed by these reasons fulfilled, etc.?

Individuals often are culturally and affectively attached to lasting things. These are part of their environment and extremely complex attitudes are related to them. Paradoxically, innovation, change, mobility, movement, are permanent traits of the environment of people in the United States. In stressing the need for innovation, Americans are fighting for the maintenance of this aspect of their way of life, for the permanency of one thing to which they are attached. A high degree of change in their technological equipment is a constant of their environment and what

ON "CONSUMER REACTION TO PRODUCT INNOVATION"

would be a real change for them is a slackening of this movement: a change they do not want, for good reasons. But, nevertheless, change is indeed a very relativistic notion.

Lasting things, especially lasting material objects, in addition are usually of high quality and of good style. Something that is made for life or for generations is often made of the best available materials designed in accordance with fundamental aesthetic patterns of centuries of artists. Two extreme cases would be, for instance: small cities in the south of France or in Italy, in which individual personality is in direct contact with quality and beauty produced by centuries of craftsmanship, on the one hand; and on the other hand a technologically perfect displaced persons camp where people are living within metal and paper walls made for a few months and among food boxes and containers thrown out every day. From the point of view of the welfare of the community, innovation has an equally ambiguous value.

Great and rapid technological changes are, of course, necessary: productivity is largely an effect of such changes, and higher national income, more leisure time, better health, more education are largely products of productivity. A rational approach to these problems would suggest a strong concentration of innovation on points of strategical importance for the transformation of the quality of existence of the most numerous and less rich sections of the population of each nation and of the world, concentration of the intellectual work—which is one of the preliminary conditions of innovation—and concentration of investment, of hours of work, and so on. From this angle, certain

kinds of innovation discussed here appear of great positive value. But others are nothing more than a way of maintaining the permanency of production and sales, which would be eliminated or reduced if the consumers were able to use their income for the kind of innovations they really need.

Consumer behavior studies are of great utility in this respect. They are an instrument for getting statistics on the attitudes of individuals and collectivities as regards the utilization of income. These statistics are put together in a general picture and sent through channels of information for free public discussion. This may increase the sense of responsibility of both the producer and the consumer. These are the kinds of innovation that are particularly wanted. From the sociological point of view, I just want to add a few words to the above comments. Generally speaking, consumer behavior studies have already produced very important results. They contribute greatly to the enrichment of interaction and communication research, of mass media research, of attitude research, of stratification research, of forecasting. They are exceptionally well fitted for the interdisciplinary approach.

Coming back to Mr. Alderson's paper, I want first to express my admiration for it. Two questions: One, on the nature of the facts that are in question: "Wants spring from needs . . . the transformation of needs into wants . . .," says the report. May we have some details on the content of needs, and on the empirical relations between needs and social environment? Secondly, on methodology. I have been impressed by the high interest of the logical construction proposed by the paper. It looks

ROGER GIROD

like a strong instrument for measuring quantitative aspects of behavior and analyzing them in terms of probability. We would appreciate it very much if

the author could have a few illustrations of the application of this method in surveys or experiments.

3

THE DESIRE FOR INNOVATIONS IN HOUSEHOLD GOODS

Eva Mueller

INTRODUCTION

The topic of this paper, "The Desire for Innovations in Household Goods," presents two problems. One is the problem of the acceptance of innovations, the other the problem of expanding consumption levels. The man who some years ago decided to wear nylon shirts decided to accept a new product; but this decision did not necessarily involve the consumption of more shirts or spending more money on shirts. The family who buys a dishwasher, on the other hand, is less likely to be making a substitution. The chances are that they are adding a new expenditure to their budget in accepting this innovation. We shall attempt to determine whether the desire for new features in the traditional household appliances, for example the desire for larger freezing compartments in refrigerators, also accelerates consumer purchases.

In accordance with the two aspects of the problem, this paper has two parts. The first part will deal with the relation between the desire for innovations in

household appliances and the level of demand. The second part will present an analysis of the factors that promote or impede the acceptance of innovations in household goods.

The point of departure for this investigation is the hypothesis that the desire for innovations in major household goods is not a fixed and unvarying influence in the market, determined solely by such factors as the consumer's age or individual personality features. Nor is it determined uniquely by technology, marketing, or advertising. Certainly all these factors play an important role. It may be argued, however, that consideration of these factors does not suffice. The desire for innovations may be thought to spread with improvements in people's financial situation, with feelings of confidence and security, and with the attainment of previous consumption goals. Conversely, interest in innovations may be assumed to weaken when people's financial situation is deteriorating, when they are pessimistic, and when they find it difficult to attain what has come to be considered an

appropriate standard of living.¹ This problem will be investigated in the pages which follow.

How does the desire for innovations fit into a study of demand? If we are interested in broad categories of demand, say the demand for consumer goods in general, it may be sufficient to analyze (1) the financial situation of consumers—their real income, assets, debt; (2) the prevailing degree of confidence, optimism, and satisfaction among consumers; and (3) certain precipitating circumstances such as family formation, childbirth, or moving. If, on the other hand, we are interested in the demand for a particular durable good, say refrigerators, the analysis must take into account additional factors that measure “felt need” for that good. The desire for innovations—new features and new goods—is one important determinant of felt need. Level of ownership and age and condition of the present stock are other crucial determinants. Together these variables tell us to what extent the market for a particular item is saturated or to what extent there are unfilled needs.

Even if we are concerned with the demand for durable household goods in general, “felt need” cannot be entirely ignored. This last proposition is evident at the present moment. Nearly every household has a gas or electric stove and a refrigerator. Eighty percent of wired homes have washing machines,

and in many areas where television reception is good, 80 percent of homes have television sets. After a long period of high purchases, the proportion of families who own fairly new appliances is higher than ever before. In two recent surveys the Survey Research Center asked a national cross section of American families how old their refrigerator is, and found that over 50 percent of families who own their refrigerator now have one that is not more than five years old; another 25 percent have older post-war models. In such a market the problem of saturation is naturally raised. It is feared by some that the felt need for household appliances in general may decline even if consumer incomes remain high and their outlook optimistic. If however, our hypotheses are correct, interest in innovations in household goods should be particularly active under conditions of expanding incomes.

We must therefore ask:

1. How strong is people's desire for the latest innovations on what we shall call the “traditional” household appliances? By this we shall mean new features on refrigerators, stoves, washing machines, and television sets.
2. How strong is people's desire for such newer household appliances as deep freezes, clothes driers, air conditioners, garbage disposal units, and dishwashers?

The data for this analysis come from several different surveys: one is a national cross-section survey of 2000 families, interviewed by the Survey Research Center in June, 1955. A second is a national cross-section survey of 1400 families, conducted in June, 1954. The urban families in the June, 1954 sample were reinterviewed three times

¹ These ideas have been advanced earlier by George Katona, “The Predictive Value of Data on Consumer Attitudes,” *Consumer Behavior*, II, Lincoln Clark, editor (New York: New York University Press, 1955), pp. 66–74. The present study is based on additional data that have been collected in the meantime for further investigating this problem.

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at half-year intervals. These reinterviews, which were made possible by a grant from the Ford Foundation, permit us to determine whether, among the group who had expressed an interest in innovations in June, 1954, purchases were more frequent in the subsequent period than among families who did not.

It should be added that this whole line of investigation is still in an experimental stage. Some of the questions used need to be reformulated; other lines of questioning should be expanded. Some findings are based on a

asked this question: "Are there any new features or improvements in the latest models that you would like to have on any of your household goods? (If 'Yes') What are they?" Table 1 presents the replies obtained in June 1955 for four major income groups. The table indicates that among families with incomes above \$3000 nearly 45 per cent expressed an interest in new features in at least one of their household appliances. According to Table 2 housewives wanted new features somewhat more frequently than their husbands, but the

TABLE 1. Percentage of Families Who Desire New Features on Their Household Appliances by Income

Attitudes	All Families	Family Income			
		Under \$3000	\$3000-4999	\$5000-7499	\$7500 and Over
Would like improvements	40	30	40	45	44
Satisfied or does not care for latest improvements	56	65	55	51	54
Not ascertained	4	5	5	4	2
Total	100	100	100	100	100
Number of cases	2027	616	628	464	259

SOURCE: Based on national cross-section survey made in June, 1955.

The question was: "Are there any new features or improvements in the latest models that you would like to have on any of your household goods? What are they?"

relatively small number of cases and therefore do not meet the tests of statistical significance. They need to be retested in future studies.

PART I: THE DESIRE FOR INNOVATIONS AND THE LEVEL OF DEMAND

THE DESIRE FOR NEW FEATURES ON THE TRADITIONAL HOUSEHOLD APPLIANCES

We shall consider first the desire for new features on the traditional household appliances. In two different surveys a cross section of families were

difference was not large. Perhaps this indicates that these desires often had reached the stage of family discussion.

One half of the people who answered this question in the affirmative spontaneously referred to new features or improvements in refrigerators. Cooking ranges ranked second in frequency of mention; washing machines and TV sets were referred to less frequently (Table 2). We might infer that the desire for improved models and new features is at present an important factor behind the felt need for refrigerators and perhaps also for cooking ranges. It seems to give less support to the de-

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TABLE 2. Percentage of People Mentioning Specific Household Goods for Which New Features Are Desired

Household Goods ^a	All Families ^b	Respondent Was Head, Male, Married	Respondent Was Wife of Head
Refrigerator	22	20	26
Cooking range	9	8	12
Washing machine	6	5	7
Television	4	6	4
Furniture	2	2	2
Other	7	7	7
Desire improvements, but no specific mentions	2	2	1
Satisfied or do not care for latest improvements	56	56	51
Not ascertained	4	5	4
Number of cases	2027	807	877

Source: Based on a national cross-section survey made in June, 1955.

^a The figures refer to household goods which people mentioned without specific probing. When a probe has been added such as, "How about new features or improvements in refrigerators?"—the percentage of respondents expressing an interest in new refrigerator features has been higher.

^b Included in this column are 343 cases where the head of the family was single. Single respondents generally showed a smaller degree of interest in new features.

^c This column does not add to 100 percent since some respondents mentioned several improvements they would like.

For question: See Table 1.

mand for washing machines and TV sets.

Those interviewed readily named specific features that they wanted in the appliances to which they referred. These features were tabulated only for refrigerators and cooking ranges. The most attractive new feature of the recent refrigerators is the larger and better freezing compartment. The interest in this new feature results, of course, from a major innovation outside the appliance industry, the growing use of frozen foods. The next most popular new feature in refrigerators is automatic defrosting, a timesaver for the housewife. The most wanted new feature in cooking ranges is again a timesaver for the housewife. It is what respondents call "automatic cooking." Improved ovens are the second most popular feature in cooking ranges. Interest in the oven is consistent with recent trends in cook-

ing (casserole cooking, home baking, etc.).

In other words, we have some innovations that represent an adaptation of home appliances to new styles in housekeeping. And we have other innovations, such as the laborsaving features, that represent the appliance industry's response to the felt need for greater convenience and efficiency in housework.

We shall now analyze in some detail the demand for refrigerators and how it is influenced by the desire for innovations. Refrigerators are singled out for this purpose, partly because we have more data on them than on the other household appliances (that is, data based on a larger number of cases), partly because innovations play, as has been shown, a particularly crucial role in the refrigerator market. Later on we shall also see how a similar analysis for

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washing machines, television sets, and cooking ranges works out.

In the present refrigerator market a large part of total demand is for replacement. The Survey Research Center found in two recent surveys that two thirds of the people who had buying plans for refrigerators were already

of replacement purchases by urban consumers in the eighteen months from June 1954 to December 1955 by age and condition of the previously owned refrigerator. Condition of refrigerator represents the owner's subjective evaluation rather than a technical appraisal. Even the reports about age may be

TABLE 3. Characteristics of Refrigerators Owned by People Who Planned to Buy and of Refrigerators Replaced by Recent Buyers

Age and Condition of Old Refrigerator	Owners with Replacement Buying Plans, June 1955 ^a	Families Who Bought for Replacement June 1954-December 1955 ^b
	Percent	Percent
5 years or less and in good condition	19	27
5-10 years and in good condition	17	18
10-15 years and in good condition	7	13
Over 15 years and in good condition	6	3
10 years or less and in unsatisfactory condition	14	8
Over 10 years and in unsatisfactory condition	29	30
Age or condition not ascertained	8	1
Total	100	100
Number of cases ^c	78	73

^a Based on a national cross-section of 2000 cases, June, 1955; age and condition of refrigerator as of June, 1955.

^b Based on an urban reinterview sample of 819 cases, December 1955; age and condition of refrigerator as of June, 1954.

^c Number of cases is insufficient to obtain statistically significant results.

The questions were: (1) "Do you own a refrigerator?" (If "Yes") "About how old is it? Is it in good condition, or only fair, or is it no longer satisfactory?" (2) "Are there any special expenditures you would really like to make in the next twelve months?" (If major appliances not mentioned) "And how about a refrigerator, TV, cooking range, washing machine?" (For each appliance family would like to buy) "What are the chances that you will buy (name item) in the next twelve months? Would

you say you're quite certain, there's a fair chance, a slight chance, or no chance at all?" (Those who answered "Quite certain" or "Fair chance" were regarded as having buying plans.) (3) "Did you buy a washing machine, a refrigerator, a television set or stove during the last twelve months?" (If "Yes") "Which?"

owners. Data collected by *Electrical Merchandising* show that 72 percent of 1955 refrigerator sales were for replacement.

Table 3 shows the distribution of June 1955 replacement buying plans by age and condition of the present refrigerator. It also shows the distribution

colored by subjective notions, where the owner is not entirely certain about the refrigerator's age. The important point is that over a third of those who planned to replace their refrigerator had owned a model that was no more than 10 years old and that in their own judgment was in good condition. The correspond-

ing proportion for actual purchases was even higher. Another 7 percent of planners and 13 percent of buyers had a good refrigerator between 10 and 15 years old. These plans and purchases constitute a sizable percentage of total refrigerator demand.

The next step is to analyze whether interest in innovations does in fact give rise to buying plans among people who

sire for new features has much to do with the origin of purchase plans. Persons who expressed a desire for new features had buying plans more frequently than those who expressed no such desire. Pronounced differences exist among all ownership groups, except where the present refrigerator is over 10 years old *and* in unsatisfactory condition.

Approximately the same results

TABLE 4. Relation Between Desire for New Refrigerator Features and Refrigerator Buying Plans (Previous Owners with Incomes of \$3000 or Over)

Age and Condition of Old Refrigerator	Families in Each Group Expressed Desire for New Features		Who Plan to Buy ^a Expressed No Desire for New Features	
	Percent	Number	Percent	Number
5 years or less and in good condition	3.4	(273) ^b	0.1	(914)
5-10 years and in good condition	3.0	(241)	1.0	(300)
Over 10 years and in good condition	8.9	(122)	0.0	(121)
10 years or less and in unsatisfactory condition	13.6	(67)	7.7	(70)
Over 10 years and in unsatisfactory condition	16.9	(93)	18.6	(83)

^a Based on one national cross section of 2000 cases plus another national cross section of 1400 cases.

^b Figures in parentheses indicate number of owners in each cell.

The table should be read as follows: "Taking first the respondents who have a refrigerator 5 years old or less and in good condition: of those who are not interested in new refrigerator features 0.1 percent plan to buy a refrigerator; of those who are interested in new features 3.4 percent plan to buy."

For questions: See Table 3.

own fairly recent refrigerators in good condition. Table 4 compares groups of refrigerator owners who are alike with respect to age and condition of the refrigerator but who differ in interest in new features. The table is limited to those with incomes over \$3000 in order to minimize the income effect. Table 1 shows that families in the lowest income brackets are less interested in innovations than other groups; these are also the families who have the lowest proportion of buying plans. In order to increase the statistical significance of the results, data from the two national cross sections have been combined. It is clear from Table 4 that the de-

emerge if the analysis is limited to families whose head is between 25 and 54 years of age. In other words, the association of buying plans with interest in innovations is not due primarily to the fact that young people more frequently than the old are innovation-minded and also more frequently have buying plans.

Table 5 presents data corresponding to those in Table 4 for the urban re-interview sample, using actual purchases instead of buying plans. In the small re-interview sample only thirty-nine families out of 855 families made replacement purchases of refrigerators in the year following June, 1954, when interest in innovations was measured. This is too

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small a group to yield statistically significant results. It is also too small to warrant the exclusion of any particular income or age groups from the analysis. Because of their great interest, the data are nevertheless presented. They suggest that among families who own a fairly recent refrigerator in good condition, those who had expressed an interest in new refrigerator features in June, 1954 had a higher frequency of purchases in the following year than those who had expressed no such interest.

1954, but might have expressed an interest in them later in the year, if the question had been repeated. Buying plans, on the other hand, were measured simultaneously with interest in new features. Secondly, a family is likely to express buying plans when it has a "felt need" for the product *and* thinks that it can afford it. Purchases, however, do occur for many additional reasons, often unexpectedly. For example, even a recent refrigerator that appears to be in good condition may break

TABLE 5. Relation Between Desire for New Refrigerator Features and Refrigerator Purchases in the Following Year (Previous Owners Only)

Age and Condition of Old Refrigerator	Families in Each Group Who Purchased During the Following Year ^a			
	Expressed Desire for New Features		Expressed No Desire for New Features	
	Percent	Number	Percent	Number
5 years or less and in good condition	5.5	(55) ^a	1.9	(313)
5-10 years and in good condition	4.1	(49)	3.6	(111)
Over 10 years and in good condition	10.5	(38)	7.3	(55)
Unsatisfactory condition	13.4	(52)	14.3	(56)

Source: Based on urban reinterview sample of 855 cases, June, 1955.

^a Figures in parentheses indicate number of owners in each cell. The number of cases in some cells and the number of previous owners who bought (39) is insufficient to obtain statistically significant results.

For questions: See Table 3.

However, the relation of innovation-mindedness with purchases is decidedly less pronounced than the relation with buying plans. About four fifths of replacement buying plans, other than those expressed by people with old refrigerators in unsatisfactory condition, are associated with interest in new refrigerator features; the corresponding proportion for purchases is below two fifths. Although these proportions cannot be viewed as exact data, the discrepancy between plans and purchases is not unreasonable. In the first place, a family who bought a refrigerator in the Spring of 1955 may not have thought of new refrigerator features in June,

down and require repairs which make replacement advisable. A family may move and find that it is too expensive to take its present refrigerator along. In another family the daughter may get married, and the parents may decide to give her their refrigerator while buying a new one for themselves. In still another family, the wife's parents may move in and a larger refrigerator is needed. Many such stories turn up if one reads individual interviews.

We shall consider only briefly the role that the desire for new features plays in the demand for cooking ranges, washing machines, and television sets. Table 6 provides a simple comparison of the

TABLE 6. Relation Between the Desire for New Features and Buying Plans for Three Major Household Goods^a

Appliance	Percentage Desiring New Features	
	Among Those Planning to Buy	Among Those Not Planning to Buy
Refrigerators	60	21
Cooking Ranges	50	12
Washing Machines	38	10

^a Based on national cross section, June, 1954.
For questions: See Tables 1 and 3.

association between buying plans and the desire for new features for refrigerators, on the one hand, and washing machines and cooking ranges on the other hand. We find that in June, 1954 a larger percentage of refrigerator buying plans than of buying plans for the other two household goods was accompanied by interest in innovations. Television sets have been omitted from Table 6 because at that time 80 percent of the families who intended to buy a television set were nonowners. Nonowners seldom express interest in innovations.

Again we shall look at replacement purchases as well as buying plans. Data

corresponding to those in Table 5 are presented for cooking ranges, washing machines, and television sets in Table 7. The three goods are combined in order to build up the number of cases in the smaller cells. Again we find that persons who said they were attracted by new features were considerably more likely than the rest of those interviewed to make a purchase during the following year. Thus the table is consistent with the idea that interest in innovations raises purchases of household goods. The similarity of the data in Tables 5 and 7 lends some additional weight to this idea, although the number of

TABLE 7. Relation Between Desire for New Features in Washing Machines, Stoves, and TV Sets and Purchases in the Following Year (Previous Owners Only)

Age and Condition of Old Appliance ^b	Families in Each Group Who Purchased During the Following Year ^a			
	Expressed Interest in New Features		Expressed No Interest in New Features	
	Percent	Number	Percent	Number
5 years or less and in good condition	8.7	(57)	3.5	(950) ^c
5-10 years and in good condition	10.4	(67)	7.7	(372)
Over 10 years and in good condition	12.1	(37)	4.6	(134)
10 years or less and in unsatisfactory condition	19.0	(75)	14.6	(133)
Over 10 years and in unsatisfactory condition	22.6	(65)	12.2	(110)

^a Based on urban reinterview sample of 855 cases, June, 1955. A family who owned all three appliances appears in this table three times, a family who owns two appears twice, etc. Hence the number of owners appears to exceed the number of cases in the sample.

^b Since a five-year-old TV set is more obsolete than a 5-year-old stove or washing machine, TV sets were classified as follows: 2 years or less as equivalent to 5 years or less for the other appliances; 2-5 years as equivalent to 5-10 years; over 5 years as equivalent to over 10 years.

^c Figures in parentheses indicate number of owners in each cell. In several cells the number of owners, and particularly of owners who purchased, is too small to obtain statistically significant results.
For questions: See Table 3.

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buyers is too small, separately or jointly, to yield statistically significant results.²

One may be skeptical and ask whether interest in new features brings about purchases or whether it follows the existence of buying plans. We know that many prospective buyers plan, look around, and talk to friends before they buy. Is interest in new features merely a *consequence* of the planning and deliberation that precedes the purchase? This question cannot be answered conclusively. However, the following considerations suggest that interest in new features frequently plays a causal role in buying. The greatest difference in frequency of buying plans as well as purchases between those with and those without interest in new features appears among owners of recent models and models that are in good condition. These are precisely the persons for whom it is most difficult to find an explanation for their replacement purchase other than interest in new features. Among owners of models that are in unsatisfactory condition, the association of buying plans and purchases with interest in new features is weak. Finally, among planners and buyers who had not previously owned the household good, hardly anyone expressed an interest in new features, and this despite the fact that previous non-owners have been found to be a particularly deliberate group of buyers.³

² George Kuznets, in a very different area, also discovered that the acceptance of an innovation raises the level of consumption. He found that the acceptance of frozen orange juice is associated with increased purchases of orange juice.

³ See George Katona and Eva Mueller, "A Study of Purchase Decisions," *Consumer Behavior*, I, Lincoln Clark, editor (New York: New York University Press, 1954), especially pp. 73-77.

THE DESIRE FOR NEW HOUSEHOLD APPLIANCES

We turn now to another manifestation of innovation-mindedness, the desire for new appliances. New appliances are defined to include dishwashers, deep freezers, clothes driers, air conditioners, and garbage disposal units. Data collected by *Electrical Merchandising* in January, 1956 show that none of these goods is at present widely owned. About 17 percent of wired homes have deep freezers, 9 percent have clothes driers; none of the other three goods was owned in January, 1956 by as many as 6 percent.

The data presented in the remainder of this investigation are based almost exclusively on the June, 1955 reinterviews of 855 urban families. This sample, being obtained by reinterviews, is not a strictly representative sample, although it approximates one. In this sample 24 percent of families owned at least one of the five new appliances and 7 percent owned two or more.

Buying plans for the new appliances are still infrequent. In June, 1954 not more than 2.5 percent of the urban population expressed buying plans for any of the five goods. However, more than 5 percent planned to buy at least one of the five. Buying plans for the entire group of appliances were about as frequent as plans to purchase a washing machine. Does the relatively low level of ownership and of purchase intentions indicate a lack of interest in the new appliances?

There is some evidence that this conclusion is not warranted. First, we may recall that many persons who, a few years ago, ridiculed television and swore that they would never have it, now own

sets. This experience illustrates that purchase plans for new goods may at the early stages fall considerably short of later purchases.

More important, our inquiry suggests that attitudes toward new appliances are already favorable and receptive among wide groups in the population. The first two lines of Table 8 show that ownership is highly correlated with in-

these families whether they had ever considered buying a clothes drier, dishwasher, air conditioner, or garbage disposal unit.⁴ Sixteen percent of urban families said, "Yes, we have considered it," and named one or more appliances that they had considered. The frequency of positive responses again increased with income. The clothes drier had been considered most frequently;

TABLE 8. Percentage of Urban Families Who Own or Have Considered Buying New Appliances by Income^a

Ownership and Consideration of New Appliances	All Urban Families ^b	Family Income			
		Under \$3000	\$3000-4999	\$5000-7499	\$7500 and Over
Owens 2 or more new appliances	7	2	3	7	18
Owens 1 new appliance	17	5	16	20	28
Plans to buy new appliances	5	2	4	8	4
Have considered buying a new appliance	16	6	14	23	24
Do not own, do not plan to buy, and have not considered buying a new appliance	55	85	63	41	25
Not ascertained	0	0	0	1	1
Total	100	100	100	100	100
Number of cases	855	196	244	260	138

^a New appliances are clothes driers, dishwashers, deep freezers, air conditioners, and garbage disposals.

^b Based on urban reinterview sample, June, 1955.

^c Less than one half of 1 percent.

The questions were: "Do you own a dishwasher, clothes drier, air conditioning unit, a mechanical garbage disposal unit, or a deep freezer?" (If "Yes") "Which?" (2) For buying plan question, see Table 3. (3) (If neither owns nor plans to buy) "Have you ever considered buying one of these appliances: dishwasher, clothes drier, air conditioner, garbage disposal unit?" (If "Yes") "Which one?"

come, rising from 7 percent among families with incomes below \$3000 to 46 percent among families with incomes above \$7500. Among the families with incomes of \$10,000 or more, 63 percent owned at least one of the five appliances. That is, where financial circumstances are favorable, ownership is already fairly common.

About two thirds of our urban families neither owned nor planned to buy one of the five new goods. We asked

the air conditioner ranked second. Dishwashers and garbage disposal units received less frequent mention.

However, the main purpose of this question was not to find out which of the new appliances is likely to have the greatest future demand. Many who now

⁴ The deep freeze was omitted from this question in order to avoid enumerating too many appliances. Because of its special usefulness in rural areas, the deep freeze was thought to be least indicative of innovation-mindedness.

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own one of these appliances are likely to buy others; but the question was not asked of them. Hence the answers are from this point of view incomplete. A major purpose of asking nonowners whether they had considered one of the four appliances was to introduce the probes that followed. People who had considered a new appliance were asked, "Could you tell me why you decided against it?" Two thirds gave one of the following three answers: "We didn't decide against it; we only postponed it," or "We felt we couldn't afford it," or "We needed the money for other things." None of these answers suggests a negative attitude toward the new appliances. Another 15 percent said that these appliances are not really needed. It appears that persons who gave this answer are not convinced of their usefulness.

Among those who had never considered one of the new appliances the explanation, "We can get along without these things," was most frequent. This answer contains only a mild degree of disapproval, if any. Outright rejections were carefully tabulated. They include such statements as, "These things are not worth the money," "They are for lazy people," "I'd rather do the work myself," "I've heard that (dishwashers) don't work well." The use of the word "gadget" alone was sufficient to put a response into the rejection category. Nevertheless, only 6 percent of those who had never considered one of the new appliances gave an answer that could be classified as a rejection. Since outright disapproval is rare, the most that can be said on the negative side is that a sizable group feels no need for the new appliances.

The feeling of need and usefulness

was approached more directly in another question that inquired: "Some people feel that these modern appliances, like dishwashers, clothes driers, air conditioners, garbage disposal units, are very useful and that everybody will own them sooner or later. Others feel that they are luxuries or not worth owning for the average person. With which of these views do you agree more?" About 44 percent of those in urban areas agreed with the first view, that these appliances are useful, compared with about 33 percent who agreed that they are luxuries and not worth owning for the average person. About a fourth of respondents gave qualified answers or could not answer the question. Table 9 indicates that the view that the new appliances are useful was more prevalent in the higher than in the lower income brackets. Among people with incomes of \$5000 or more the answer "useful" outnumbered the answer "luxury" by about two to one.

One further indication of the progress the new appliances have made in public esteem is yielded by the survey data. Those interviewed were asked whether their friends own any of the new appliances. If the answer was "Yes," it was followed by the probe, "How do your friends feel about these new appliances; are they enthusiastic, or critical, or what?" The answers were rather surprising. More than 60 percent of the urban respondents asserted that their friends own the new appliances, although less than 25 percent of the urban population actually own at least one of them. The discrepancy was particularly striking in the group with incomes under \$3000, where 7 percent are owners but 43 percent reported that their friends are owners. This means

TABLE 9. Respondents' Evaluation of New Appliances as "Useful" or "Luxury" by Income

New Durables are:	All Urban Families ^a	Family Income			
		Under \$3000	\$3000-4999	\$5000-7499	\$7500 and Over
		Percent	Percent	Percent	Percent
Useful; will be owned sooner or later by everyone	44	37	40	47	57
Pro-Con	17	18	18	16	16
Luxuries; not worth owning for the average person	33	39	36	30	22
Not ascertained	6	6	6	7	5
Total	100	100	100	100	100
Number of cases	855	196	244	260	138

^a Based on urban reinterview sample, June, 1955.

The question was: "Some people feel that these modern appliances, like dishwashers, clothes driers, air conditioners, garbage disposal units, are very useful and that everybody will want to own them sooner or later. Others feel that they are luxuries or not worth owning for the average person. With which of these two views do you agree more? Why do you say so?"

that some people either wanted to show off or that they took the word "friends" to mean any acquaintance, however remote. Three fourths of those who reported that their friends own new appliances also reported without any qualifications that their friends are enthusiastic about them. Only one in twenty reported that their friends were critical. The questions were intended to give some indication about the influence of friends on the individual's willingness to accept new appliances. As they stand, they tell us little about the role of friends, but suggest strongly that considerable prestige surrounds ownership of the new appliances.

We can only speculate that favorable attitudes toward the new appliances foreshadow a higher level of ownership. There is no statistical proof yet that the gap between ownership and popular acceptance of the new appliances that appears in our data is meaningful in terms of future purchases. If prosperity and high incomes continue, sales figures for the new appliances will provide one

type of test for the validity of our findings. If in a year or two the people whose attitudes toward new appliances were measured in June, 1955, could be reinterviewed, we might determine whether sales were higher among consumers who appeared "innovation-minded" than among others. This would be a stronger and more conclusive test.

A different kind of check on the validity of survey data is provided by internal consistency of answers, that is, by the requirement that answers to one question should be meaningfully related to answers to other questions. In the present case the characteristics and financial circumstances of families who already own the new appliances should exhibit a plausible and consistent relation to the characteristics of families with favorable attitudes who do not yet own them. We shall now turn to an analysis of the circumstances under which innovations in household goods are accepted or rejected. Incidentally, this analysis should provide that type of a check.

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PART II: DETERMINANTS OF INNOVATION-MINDEDNESS

In this part of the analysis we shall attempt to explain differences in the desire for innovations between groups of consumers. Before discussing the circumstances under which innovations are accepted or ignored we must take account of the fact that we are dealing with several different and distinct innovations. Each of these fills a particular

need and naturally has the greatest appeal to the consumers who feel this need most acutely. For example, we should expect to find more interest in air conditioners in Texas than in Minnesota, more interest in deep freezes among farmers and people with gardens than among the population of metropolitan centers. Tables 10 and 11 illustrate this point. Table 10 shows how ownership of deep freezes varies between rural and urban areas. Table 11

TABLE 10. Differences in Ownership of Deep Freezes Between Rural and Urban Families by Income (by Percent)

Ownership of Deep Freeze	All Families ^a	Rural Urban		Under \$3000 Rural Urban		Family Income			
						\$3000-4999 Rural Urban		\$5000 and Over Rural Urban	
Owner	13	23	10	16	4	21	8	43	14
Nonowner	87	77	90	84	96	79	92	57	86
All cases	100	100	100	100	100	100	100	100	100
Number of cases	1400	225	1158	107	263	75	381	40	457

^a Based on national cross-section sample, June, 1954.

TABLE 11. Ownership of Clothes Driers by Family Status (by Percent)

Ownership of Clothes Drier	All Families ^a	Head under 45 years				Head 45 years or Over		
		Single	Married, No Children	Married, Youngest Child Under Six	Married, Youngest Child Six or Over	Married, with Children Under Eighteen	Married, No Children Under Eighteen	Not Married
		All Families						
Owner	6	0	6	5	8	9	8	1
Nonowner	94	100	94	95	92	91	92	99
All cases	100	100	100	100	100	100	100	100
Percent of sample of 1400 cases	100	3	7	25	11	12	24	12
		Families with Income \$5000 and over						
Owner	12	^b	10	8	16	16	16	^b
Nonowner	88	^b	90	92	84	84	84	^b
All cases	100	^b	100	100	100	100	100	^b
Percent of sample of 500 cases	100	2	8	25	15	16	27	5

^a Based on national cross section, June, 1954.

^b Not enough cases.

shows how ownership of clothes driers is related to the family life cycle.

However, our interest is not so much in the special reasons that lead to the buying of individual appliances as in the common characteristic of all five appliances: that they are relatively new on the market and owned so far by only a small minority of consumers. Persons who decide that they want one of these appliances are accepting something new and believe that by buying the appliance they are fulfilling a need and raising their standard of living by a step. Similarly, those who desire the newest features on their traditional appliances are aware of innovations and find it worth the money to have the newest in household equipment. We want to find out in what social or economic groups and under what circumstances such attitudes and aspirations are most likely to emerge. Taking several innovations, instead of one at a time, thus has two advantages. First, it increases the number of cases that occur in a sample of a given size. Secondly, it minimizes the role that the special properties of any one innovation play in desire for innovations.

Let us call the attitude we want to study "innovation-mindedness." There is a sort of rule of thumb in the appliance industry which says that once an appliance is accepted by 10 percent of families it has "made the grade," that is, it is on its way to being found in a majority of homes. Actually, if one looks at ownership figures for a wide range of electrical appliances, it appears that there are many that are owned by a fourth or less of families and some that are owned by a third. And there are others which are owned by 70, 80, or 90 percent. But there are practically

none in a middle position. This suggests that social forces strongly reinforce the desire for an innovation once that innovation has made some headway. But at that stage the appliance or the new feature is, strictly speaking, no longer an innovation. It makes progress precisely because it has become part of what is regarded as standard equipment for a home. Professor Riesman has called this "the standard package."⁵

It is particularly important, therefore, to study the earlier careers of innovations and to ask who are the people who view them favorably at an early stage. Or, what are the conditions that induce or prevent spending money on a new product not yet widely accepted?

Conceptually, we may distinguish between two stages in the early progress of an innovation. First, there is the "pioneering" stage that involves a handful of individuals only. They are the very first ones to try out a new product, before their neighbors or acquaintances have had experience with it. For a member of this group the desire to experiment and to be "first" in owning new goods may be an enduring feature of the living pattern or even of the personality. Then comes a stage where we may rightfully speak of the acceptance of an innovation. The new product spreads, but ownership remains confined to a minority of families. "Innovation-mindedness," as defined here, is related to this second stage. Most of those who are innovation-minded are not "pioneers," but they become interested in the new product *before* it attains widespread acceptance.

⁵David Riesman and Howard Roseborough, "Careers and Consumer Behavior," *Consumer Behavior*, II, Lincoln Clark, editor (New York: New York University Press, 1955), pp. 1-18.

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Can we construct a measure of this attitude? Several measures of the desire for innovations in household appliances have been presented so far, the three major ones in Tables 1, 8, and 9. These three measures are related to each other, which suggests that they contain some common element. Opinions about the usefulness of the new appliances (Table 9) are strongly correlated with ownership and with reports that the family planned or considered buying one of the new appliances (Table 8). The correlation is pronounced in every major income group, but is somewhat stronger among low-income families than among high-income families. In other words, people with incomes above \$5000 may buy or consider buying new appliances even if they regard them as luxuries. Such behavior is rare among people with incomes below \$5000. Both of these variables that measure acceptance of new appliances are correlated with the desire for new features in the traditional household goods. The correlation with this third variable is weaker than that between the two measures that relate to new appliances and disappears in the lowest income bracket, among people with incomes under \$3000.

On the basis of these data a crude scale was constructed which classifies individuals according to the following criteria:

1. Interest in the latest features of the traditional appliances
2. Owning, planning to buy, or having considered a new appliance
3. Evaluations of new appliances as "useful" or "luxury."

Three groups were formed.⁶ The first,

⁶ For a detailed account of method of classification, see Footnote ², Table 12.

which we shall call "innovation-minded," contains 22 percent of the sample and consists of those who by these three criteria were clearly interested in innovations. They are not "pioneers" in the sense of being the first to try out a brand-new product of whose value they are uncertain. That group is by definition much smaller. But they are the opinion leaders in the second stage, which involves a gradual and still limited acceptance of certain innovations. At the other extreme is a group we shall call "not innovation-minded." It is of about equal size and consists of those who reacted negatively to all the major innovation questions. The remaining cases, comprising over 50 percent of the sample, are in a group labeled "intermediate."

DEMOGRAPHIC AND SOCIOLOGICAL FACTORS

Table 12 shows that there are several demographic or sociological characteristics that influence innovation-mindedness. The desire for innovations decreases with age, particularly after age 55. It is higher among married couples than among families where the head is a single person; and it is higher among couples with children than among those without children. The desire for innovations also increases with education. This relation has been tested within major income groups, and it was found that it is only partly attributable to the fact that income has some tendency to rise with education. People in the better paid occupations are more interested in innovations than those in the low-income occupations, but occupation seems to have little independent effect on innovation-mindedness. One might ex-

TABLE 12. Relationship Between Attitudes Toward Innovations and Demographic Characteristics (by Percent)^a

	Innovation-Minded ^b	Intermediate ^b	Not Innovation-Minded ^b
Age of head			
18-34	28	25	17
35-54	58	42	40
55-64	10	19	20
65 and over	3	12	20
Not ascertained	1	2	3
Total	100	100	100
Family status			
Single	8	16	22
Married without children	20	31	40
Married with children	69	46	32
Other or not ascertained	3	7	6
Total	100	100	100
Education of head			
Grade school only	21	36	44
High school	44	44	45
College	34	19	10
Not ascertained	1	1	1
Total	100	100	100
Place of residence			
Large metropolitan area-central city	19	21	22
Suburbs of large metropolitan area	28	20	19
Other cities 50,000 and over	24	23	27
Towns 2500-50,000	29	36	32
Total	100	100	100
Number of cases	179	421	163

^a Based on urban reinterview sample of 855 cases, June, 1955.

^b The three attitude categories are based on the following criteria:

1. Interest in the latest features on the traditional appliances (for question, see Table 1).
Desiring new features and naming one or more specific appliances is a positive response.
Not being interested in new features is a negative response.
2. Owning, planning to buy, or having considered purchasing a new appliance (for question, see Table 8).
Owning or planning to buy one of the new appliances is a positive response.
Having only considered buying is a pro-con response.
Neither owning nor having considered it is a negative response.
3. Respondent's evaluation of new appliances as "useful" or "luxury" (for question, see Table 9).
The answer "useful" is a positive response.
Answers such as "partly useful, partly luxury" are pro-con responses.
The answer "luxury" is a negative response.

A person is classified as innovation-minded if he or she gave three positive responses or two positive and one pro-con response. A person is classified as not innovation-minded if he gave only negative responses or two negative and one pro-con response. All remaining cases are classified as intermediate. The aim of this scheme is to identify the two groups that clearly constitute the extremes on an "innovation-mindedness scale." Additional questions would be needed to achieve a more refined scaling of the middle group.

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pect that people in large metropolitan areas would be more innovation-minded than those in smaller towns because of their greater exposure to window displays, advertising, and sales pressures. This expectation is not borne out by Table 12, possibly because home ownership is less widespread in the large cities than in the smaller towns.

ENABLING CONDITIONS

If we had asked Veblen who are the opinion leaders among consumers, he

should be predisposed toward innovations, but who do not turn out to be innovation-minded. And within the large group of families in the middle age and middle income brackets who have children, in which the head has not gone beyond high school, the desire for innovations in household appliances varies greatly. Clearly, there must be other determinants of innovation-mindedness. These must, however, be studied against the background of what we know about the influence of demographic factors and income.

TABLE 13. Relationship Between Attitudes Toward Innovations and Income (by Percent)^a

	Innovation-minded	Intermediate	Not Innovation-minded
Family Income			
Under \$3000	6	26	35
\$3000-4999	23	27	34
\$5000-7500	39	30	23
\$7500 and Over	30	16	6
Not ascertained	2	1	2
Total	100	100	100
Number of cases	179	421	163

^a Based on urban reinterview sample of 855 cases, June, 1955. For definition of three attitudes toward innovations see Footnote ^b, Table 12.

would have answered that the wealthy lead in setting new consumption standards. Tables 1, 8, and 9 have shown that the desire for innovations in household appliances increases markedly with income. The income effect is even more apparent if we relate the three-point innovation-mindedness scale to income. However, this is by no means the whole story. Table 13 shows that 29 percent of the innovation-minded have incomes below \$5000; and only 30 percent have incomes of \$7500 or more.

Nor should we overrate the explanatory value of the demographic factors. There are many families who, on the basis of demographic characteristics,

CONSUMER ATTITUDES AND EXPECTATIONS

Ability to buy may not greatly affect consumer purchases, unless it is accompanied by "willingness to buy," that is, by consumer attitudes that are conducive to a high level of spending. Two kinds of attitudes show a pronounced relationship to innovation-mindedness: (1) the individual's view of past and prospective changes in his financial situation and (2) evaluations of current market conditions. Table 14 shows that in the innovation-minded group optimistic expectations are twice as frequent as among those who are not innovation-

OWNERSHIP OF THE HOME AND OF THE
TRADITIONAL APPLIANCES

Psychologists have found that in many areas of human endeavor aspirations rise with achievement. In the present context this would imply that the felt need for innovations should become particularly strong when people are well equipped with the traditional appliances. By traditional appliances we

ership of the four "traditional" appliances. In our urban reinterview sample 45 percent of families own their home and all four of these appliances. Other large groups rent their houses or apartments and own the four major appliances or own their homes and three of the four appliances. Table 16 relates this ownership scale to ownership and consideration of the new appliances. The table shows the ownership of the

TABLE 16. Percentage of Urban Families Who Own or Have Considered Buying New Appliances by Ownership of Home and Traditional Household Appliances^a

Ownership and Consideration of New Appliances	Owns Home			Rents		
	Owns 4 Traditional Appliances	Owns 3	Owns 2 or Fewer	Owns 4 Traditional Appliances	Owns 3	Owns 2 or Fewer
Own two or more new appliances	11	5	2	5	0	0
Own one new appliance	23	11	10	20	10	7
Plan to buy new appliance	4	6	2	6	4	2
Have considered buying a new appliance	17	16	10	16	21	12
Do not own, plan to buy and have not considered buying a new appliance	44	61	76	53	65	79
Not ascertained	1	1	—	—	—	—
Total	100	100	100	100	100	100
Number of cases	386	116	42	100	71	127

^a Based on urban reinterview sample of 855 cases, June, 1955. The "traditional household appliances" are cooking range, refrigerator, washing machine, and TV. "New appliances" are clothes driers, dishwashers, deep freezers, air conditioners, and garbage disposals.

For questions: See Table 8.

mean stove, refrigerator, washing machine, and TV. For TV and the washing machine the word "traditional" may seem to be a misnomer; but these goods have already become part of the "standard package." When persons have acquired the "standard package," the question arises whether this means the end of appliance purchases for a time or whether a desire for innovations will come to the fore.

In this study ownership status is measured by home ownership and own-

ership of the four "traditional" appliances is somewhat higher among homeowners than among renters. Within these classifications, it is considerably higher among those who own all four of the traditional appliances than among those who own three or less. Whether or not a family has considered one of the new appliances also depends on present ownership of the traditional appliances. Our other two measures of innovation-mindedness are also related to the ownership scale. These correlations are weaker than that

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which is shown in Table 16, but in each case families who own a house and all four household goods appear more innovation-minded than others.

One might ask to what extent the association between ownership of the traditional appliances and the desire for innovations is attributable to the fact that well-to-do persons and families in the middle age brackets are the ones who are most completely provided with the traditional household goods. Table 17 shows the relation between our three-point innovation-mindedness scale and the ownership scale, first for two broad income groups and then for families whose income is between \$3000 and \$7500 and who are also in the middle age groups. In this manner the effect of age and income is, if not entirely eliminated, at least greatly reduced. Nevertheless, it appears clearly that among the innovation-minded, families who already own a home and the four major home appliances are much more frequent than in other groups. On the other hand, very few are innovation-minded who do not own at least three of the traditional household goods.

Finally, within each ownership group we may attempt to distinguish between people who are satisfied with their possessions and those who aspire to a higher standard of living. Two questions asked of the reinterview sample are useful for this analysis:

1. "The things we have—housing, car, furniture, recreation and the like—make up our standard of living. Some people are satisfied with their standard of living, others feel that it is not as good as they would like. How is it with you?"
2. "If you were free to choose, would

you *like* to stay here in this home (apartment) or would you like to move from this place?"

Considering only people with incomes of \$3000 or more who own their house and the four traditional household goods, we find that among those who were satisfied with their standard of living 28 percent are innovation-minded; among those who would like a higher standard of living 38 percent are innovation-minded. Similar differences appear if, among those who own their homes and all four appliances, comparison is made between those who are satisfied with the current house and those who would like a different place to live. Again, those who are satisfied are less likely to be innovation-minded than those who desire a change. That is, when people are well provided with the basic possessions, aspirations toward a higher standard of living tend to be associated with innovation-mindedness.

PERSONALITY CHARACTERISTICS

It would be interesting to know whether and how innovation-mindedness is governed by personality structure and individual personality needs. An inquiry of this sort would have required submitting the respondents in the sample to extensive psychological tests, a procedure not feasible within the scope of the present study. We therefore pose a more limited and simpler question. Is innovation-mindedness an attitude that is meaningful only in relation to a particular product or group of products? Or do our measures of the desire for innovations in household appliances have some generalized meaning that extends beyond the field of household appliances? For example, could we

TABLE 17. Relationship Between Attitudes Toward Innovations and Ownership of Home and Traditional Household Appliances, Within Income and Age Groups (by Percent)^a

Ownership of Home and Traditional Appliances	Income \$3000-4999, Any Age			Income \$5000 or Over, Any Age			Income \$3000-7499, Age 25-55		
	Innovation-Minded	Intermediate	Not Innovation-Minded	Innovation-Minded	Intermediate	Not Innovation-Minded	Innovation-Minded	Intermediate	Not Innovation-Minded
Owens home and four traditional appliances	65	46	32	64	58	33	68	50	31
Owens home and three	13	15	14	9	10	24	6	9	11
Owens home and two or fewer	2	4	9	0	3	4	0	1	12
Rents home, owns four traditional appliances	10	12	25	12	11	18	13	12	26
Rents home, owns three	2	10	7	8	10	4	5	16	5
Rents home, owns two or fewer	5	11	13	6	8	17	6	11	15
Not ascertained	3	2	0	1	0	0	2	1	0
Total	100	100	100	100	100	100	100	100	100
Number of cases	40	114	56	123	191	46	90	169	61

^a Based on urban reinterview sample of 855 cases. "Traditional household appliances" are cooking range, refrigerator, washing machine, and TV. For definitions of three attitude categories, see Footnote ^b, Table 12.

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predict on the basis of ranking on our three-point innovation scale how individuals would react toward innovations in cars, housing, clothes, food, or pens?

There may well be such a personality feature as "the desire to experiment or to try out new things," or there may be persons who get a particular satisfaction from being the first to own new products. An example would be the man who for years took great pride in the fact that he had been the first in his neighborhood to own a radio and who made sure that he was also the first to own an air conditioner. But it is likely that this group, whom we have previously called "pioneers," is not numerous. On theoretical grounds there is a strong presumption that it would not include 22 percent of the population, the size of our innovation-minded group.

One reason for this presumption is that different innovations fill different needs not only in terms of climate or family size but also in terms of personality.⁸ Driving the latest car may enhance Mrs. Jones's ego, but using frozen rather than canned soups would hardly serve the same purpose for her. Second, different innovations differ in their impact on established habits, customs, or

cultural patterns.⁹ Third, if the acceptance of innovations is dependent on such situational factors as the influence of friends or the condition of one's present stock of goods, it is unlikely that these factors influence the desire for all innovations equally or simultaneously.

One would have to collect data on reactions toward a wide range of innovations in order to study this problem empirically. The present study went only a small step in that direction. The urban reinterview sample was asked to express their preference between three houses of about equal size of which they were shown sketches. The first was a traditional colonial style house, the second a more recent one-story house built in a rather conventional style, the third a very modern home. In addition, the reinterview sample was asked a question about cars: "Now about power steering and power brakes—do you think they are worth the extra money?" Table 18 relates the answers to both questions to attitudes toward innovations in household appliances.

Some correlation appears in Table 18. Persons who rank high in their desire for innovations in household appliances are somewhat more likely than those who rank low to react favorably toward the modern house and toward power steering and power brakes. But we must ask whether any relationships exist beyond those attributable to the fact that younger people and those with higher incomes are more likely to accept innovations than the rest of the population. This question cannot be answered conclusively from a sample of the size used here. The results, which are based on small numbers of cases, suggest that among people in the upper-income brackets there is some evidence of an association of innovation-mindedness in

⁸ This point is discussed in some detail by H. G. Barnett, *Innovation* (New York: McGraw-Hill Book Company, 1953), pp. 378–410. Some empirical work regarding the relation between personality needs and the acceptance of an innovation is being conducted currently by Cyril C. Hermann of Arthur D. Little, Inc. See *Business Week*, April 30, 1955, pp. 82–92.

⁹ This aspect of the problem has been explored by Saxon L. Graham, "Selection and Social Stratification" (unpublished Ph.D. thesis, Yale University, 1951); also by the same author, "Class and Conservatism in the Adoption of Innovations," *Human Relations*, IX, No. 1 (1956), 91–100.

TABLE 18. Relationship Between Attitudes Toward Innovations and Preference for Modern Features in Houses and Cars (by Percent)^a

	All Urban Families	Innovation- Minded	Intermediate	Not Innovation- Minded
House Preference				
Colonial style, 2 stories	22	22	22	28
Recent ranch type conventional in style	69	65	69	68
Modern architecture	8	11	8	4
Not ascertained	1	2	1	0
Total	100	100	100	100
Attitude Toward Power Steering and Power Brakes				
Both worth the money	33	45	30	30
Only 1 worth the money	10	14	9	8
Neither is worth the money	22	19	25	17
Depends or don't know ^c	35	22	36	45
Total	100	100	100	100
Number of cases	855	179	421	163

^a Based on urban reinterview sample of 855 cases, June, 1955. For definitions of three attitude categories, see Footnote ^b, Table 12.

^b Less than one half of one percent.

^c Includes many people who do not own a car or who feel that they can afford to drive only old cars. The questions were: (1) "Some people prefer a traditional house, others would rather have a modern house. Here is a picture of a traditional colonial style house, a house in more recent style, and a very modern house. (Respondents were shown sketches) Supposing that you had to choose among these three houses which cost the same and are about the same size, which would you prefer? Why is that?" (2) "Now about power steering on cars and power brakes—do you think they are worth the extra money? Why do you say that?"

one area of consumption with innovation-mindedness in other areas, but that it is not a strong association. In the middle- and lower-income brackets there is no evidence that any relationship at all exists. It has been argued above that innovation-mindedness implies some readiness to raise consumption standards. Most people's desires and wishes, at least those they express freely, are circumscribed by reality. Those with incomes under \$5000 simply cannot afford to want the latest in household appliances, cars, and houses. Innovation-mindedness appears to be associated with optimism, positive aspirations, perhaps also upward mobility. Nevertheless it need not be, and very frequently is not, directed simultaneously toward all innovations.

SUMMARY AND CONCLUSIONS

Let us now ask what role innovations play in the consumer sector of the economy. Do they merely act as substitutes for existing products without affecting the level of consumer spending, or do they play a more active role? Our answer must be limited to innovations in household goods. There it appears that the acceptance of innovations involves a predisposition to raise one's standard of living and to expand expenditures on durable goods. The desire for new features in the older appliances gives rise to plans to replace appliances that are neither worn out nor in poor condition. And interest in new types of appliances tends to follow upon ownership of the standard household appliances.

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We have called the willingness to accept new goods *before* they have come to be regarded as something that every well-furnished home should have "innovation-mindedness." The emergence of innovation-mindedness undoubtedly depends in part on technological developments, that is, on the availability of attractive new products or features that satisfy physical, social, or personality needs. Still, this study shows that innovation-mindedness will not occur automatically. We find that it tends to become active primarily when what is regarded as standard household equipment has been acquired. Beyond that, the study suggests that a desire for innovations is felt primarily when people are satisfied with their financial situation and expect it to improve further and when they view buying conditions favorably.

A second question we attempted to answer was: "Who are the opinion leaders when it comes to innovations in household goods?" Is it true that in our society only the well-to-do are the opinion leaders? The answer is a decided "No." To be sure, almost none of the members of our innovation-minded group are poor; but many are in the middle-income brackets. They tend to be found among the young and among the well-educated. They tend to have a strong interest in the home, being primarily married couples with children. The chances are that they view their financial progress favorably. Most likely they have positive aspirations and are in a frame of mind to upgrade their standard of living.

4

COMMENTS ON "THE DESIRE FOR INNOVATIONS IN HOUSEHOLD GOODS"

Ernst A. Dauer

Miss Eva Mueller's paper on "The Desire for Innovations In Household Goods" made me think of a trip I took with my family to Mesa Verde about a month ago. This National Park in southwestern Colorado contains the cliff dwellings occupied by the Indians for a century prior to AD 1300. Some of those dwellings are in an excellent state of preservation and it seems probable, had the Indians not left them after a quarter-century of drought, that they would still be occupied in essentially the same manner today as they were over 650 years ago. In other words, the occupants of those cliff dwellings were near one extreme of a scale with respect to the desire for innovations in households, in household goods, and in modes of transportation. Substantial groups of people on the continents of Asia, Africa, and South America are apparently in a similar position. The typical American family today is close to the opposite extreme. The comments of Professor Girod and Dr. Katona this morning would place the inhabitants of the free nations of Europe in between,

with variation from nation to nation in the degree to which they approach our end of the scale.

The market research analyst is interested in the study of consumer attitudes and behavior in order to determine the sales potential for particular articles and particular brands. My interest in this field is that of an economist studying the use of consumer credit. Hence, I am interested in those things that affect consumer demand for goods, in general—particularly for the type of goods usually bought on time.

In this connection the paper of Miss Mueller, as well as the papers this morning, emphasize several important facts.

1. Interest in new features does stimulate buying; change is dynamic. New features in those products that are theoretically closest to the saturation point do result—year after year—in large output and large sales.

2. The unique characteristic of our high scale of living is the large extent to which it is represented by the ownership and continuing enjoyment of the services from homes, household goods,

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cars, and other major durable goods owned by the mass of American families. Mass production has brought the price of those goods within reach of the average family. Mass production is neither feasible nor profitable without mass consumption. But until recently, economists, generally, and even marketing specialists have ignored the fact that consumer credit, the time payment plan, is the vital link between mass production and mass consumption.

3. The *Survey of Consumer Finances* of the Survey Research Center has repeatedly shown that the highest intensity of demand for automobiles and major durable goods is to be found in consumer units with incomes of \$3000 or more and in groups having certain demographic characteristics. The use of consumer credit occurs to the greatest degree in essentially the same groups—among families the head of which is below forty-five years of age, who has one or more children below the age of eighteen, and who has an income of from \$3000 to \$7500 a year. If one may generalize on the basis of Miss Mueller's tables, those consumer units that are innovation-minded also fall in basically the same income groups and have the same demographic characteristics. Conversely, we might say that in those groups where, year after year, the bulk of the purchasing of major durable goods occurs, there also we find the greatest degree of innovation-mindedness.

4. Miss Mueller has called attention to the very limited sample of cases upon which some of her generalizations are based. I wish to underscore her caveat; they apply equally to my comments. I sincerely hope that the *Survey Research*

Center will be in a position to add to its samples in order to confirm Miss Mueller's conclusions. If these conclusions are confirmed, her findings have a very optimistic portent with respect to the long-range future of our economy.

Both official and unofficial forecasters, amateur and professional, predict continued higher output by the American economy and rising standards of living, if, in the words of President Eisenhower: "We manage our affairs wisely and adhere to policies which evoke a maximum of private initiative and enterprise." Continued increase in the rate of productivity will result in an output of goods and services twenty years from now of two or two and a half times the present total (in terms of present prices). Such forecasts raise the question: "Will consumer demand expand commensurately?"

Miss Mueller's tables show that a substantial minority of families in the income groups above \$3000 a year now have one of the newer household appliances (such as dishwashers, clothes driers, air-conditioning units, garbage-disposal units, and deep freezes). Ownership of two or more is pretty well limited to families in income groups above \$7500 a year. The significant fact, however, is that about one half of all families, regardless of income group, said that everyone will want to own those newer appliances sooner or later. This justifies the tentative conclusion that the desire of families to acquire a wider range of family equipment, as their incomes permit, will cause consumer demand to expand *pari passu* with the increase in productivity.

5

CONSUMER PRODUCT ACCEPTANCE RATES

A. C. Nielson, Jr.

My subject this afternoon deals with the question of how long it takes to acquaint the public with the virtues of a new and/or improved product to the point where enough people will purchase it in sufficient quantities to return a profit to the manufacturer.

Every individual or company considering the launching of a new product must obviously make some calculations regarding the time interval required to reach the break-even point. If consumer demand is slower to develop than had been hoped, in all probability the capital invested will have been lost and the venture will be a failure. The product represents the hopes and life savings of some individuals; the results can often be heartbreaking.

I am sorry to say that my research has led me to no magic number—not even to a formula that can be used with certainty. Because of the fickleness of consumer behavior, it appears to be virtually impossible to predict in advance just how long it will take to achieve a satisfactory level of sales. The record shows that even the most seasoned marketing executives are missing

their guesses by months and even years on these questions.

By way of example, let us consider the experience of the great DuPont organization. This company is blessed with the services of literally thousands of the most highly skilled laboratory technicians in the world. These men lack for nothing in the way of equipment or resources. Every year they develop countless technically sound products. And yet, according to Mr. Hart, one of their marketing vice-presidents, only one such product in twenty ever becomes a success in the market place! Many of these products are so unsuitable for the market that no attempt is made to launch them. Of products launched, however, by industry in general, two out of three fail, according to Marion Harper, Jr., President of McCann-Ericson.

Why, then, if the *batting average* of ultimate success from technical development projects is so low, do so many American companies spend so heavily on this function? I have purposely singled out American companies, because research and development activi-

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ties are, with a few exceptions, not to be found on such a grand scale anywhere else in the world. Our company operates in ten different countries and I have visited many fine companies in these countries. Often I have asked to see their research and development department only to be told that there is none or that it was carried on in a very modest scale indeed. There are exceptions, to be sure—but the big emphasis on product innovation is primarily a United States phenomenon.

Heavy research and development expenditures are required, I believe, in the peculiar type of business economy that has developed here. Competition is intense, to say the least, and new product developments of an individual concern are not shared with competitors as is commonly the case in countries where monopoly and cartel arrangements are permitted and practiced.

Furthermore, here we have a very high level of discretionary spending, meaning that most consumers can shift their preferences virtually at will over a tremendous range of products. Finally, the United States possesses highly developed sales organizations and powerful advertising media; the former can place products quickly into stores throughout the land and the latter can herald their arrival with tremendous impact. In countries where these forces are not operating, or are in a less highly developed state, our reports reveal that considerably longer periods of time must be allowed for the introduction of new products, package sizes, and other variations.

Because of the differing rates at which consumer behavior can be altered in different countries, owing to the factors just mentioned, I shall confine the

balance of my remarks to conditions as they now exist in the United States.

The speed with which consumer products can be launched has been accelerated in the past few years. Television must be given the credit for much of this, since it has proved to be an exceptionally powerful medium for demonstrating new products. This particular quality of TV can be seen in the following example. One of the most successful users of TV has been the Gillette Company. They got into TV early and began advertising both their razor blades and shaving cream. While the sales response on blades was, I judge, satisfactory, the rate of gain on shaving cream was much more rapid.

This appeared to be because the majority of men were well acquainted with the fact that Gillette made blades. They had tried them long ago and had decided to use them, or some other competing product. Gillette's shaving cream, on the other hand, was nowhere near as well known, with the result that the TV advertising attracted many new users for this product.

The accelerated rate at which new products or variations of old products can be introduced to the market is a mixed blessing to the businessman. On the one hand, it has reduced the business gamble involved in this activity by shortening the period of time during which a management is uncertain regarding the ultimate success or failure of the product. But on the other hand, it has placed in greater jeopardy than ever the earning ability of established brands. This is true because a product that has long enjoyed the consumers' favor can now be thrown into a loss rather rapidly through the introduction of a marginally more acceptable competing item.

The magnitude of brand vulnerability can perhaps best be grasped by the results of an analysis of the competitive progress of one hundred brands that stood in first place in their respective fields at the time World War II started at the end of 1941. By the end of 1954, forty-eight of these brands had been nudged out of the top spot at one time or another. Our study convinced us that the greatest single cause for these shifts appeared to be the development of a superior product by a competitor.

Alert corporate managements would be advised to take certain steps to safeguard their businesses, among which the following would seem to deserve major attention:

1. Development of a research and development program equal to or superior to that maintained by competitors.
2. Measurement on a continuous basis of brand sales performance in all fields in which the company has a major entry of activity, in order to observe promptly the progress of competitors' innovations.
3. Establishment of an effective method for studying the growth and other important characteristics of markets in which the company might logically have an interest in order to direct the activities of the research and development group along the most productive lines.
4. Allocation of funds sufficient to permit the continuous market testing of new products developed by the laboratory, or otherwise acquired through purchase, merger, consolidation, etc.

As a guide to marketers of consumer products, I thought it might be helpful

to examine the most recent experience of others in launching new products and/or product innovations with respect to (a) what percentage of the operations are successful, and (b) how long it takes to determine whether the product will be a winner or a loser.

For this study, I selected twenty-five product types where, to the best of our knowledge, laboratory research established a product superiority, and where test market operations were sufficiently encouraging to justify the commitment of sizable funds for a major marketing effort.

I purposely excluded from this study products launched by new companies, since in cases of this type many problems other than influencing consumer behavior must be overcome, including the development of a sales organization that can place the product in general distribution. Such companies must, for the most part, start locally, gradually spread out sectionally, and if national distribution is achieved in three to four years, performance has been good.

On the other hand, a well-established company with an effective sales organization that is in regular contact with stores should be able to achieve broad national distribution on a new item within three to four months, thereby affording a much better opportunity to judge in a relatively short time the success or failure of the new item.

Included, however, in my list of twenty-five products are several made by small or medium-sized companies. These companies already had one or more successful nationally distributed items, and were therefore in a position to achieve prompt distribution on the new item by trade deals involving the old and the new item in combination.

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Since there is virtually nothing new under the sun, most of my cases involved improvements on existing products, as, for example, synthetic detergents, aerated shaving creams, no-smear lipsticks, presweetened cereals. Consequently, the new product invariably cut into the sales of the old product to some extent. For this reason, my measure of success has been whether or not the company's over-all competitive share of the market increased, considering both the new and the old item on a combined basis. This may be an unnecessarily severe yardstick of performance in some cases, since the new product type, or form, often contributed to expanding the total market for the commodity. In some cases the innovating company's share of the market did not increase but the total number of units sold by them on the combined basis was greater than before.

Here then are the results: 62 percent of the companies originating a new improved product or variation (and notice I said originating, not merely copying a competitor) achieved a higher sales share. No change was registered by 13 percent of the companies, and 25 percent showed a lower share. The reasons for the declines in share were varied, but perhaps the most common reasons could be found in either the fact that the product did not meet the excessive claims made for it, as in the case of chlorophyll dentifrices, or that while technically superior it was not found to be as convenient in use as other forms. In other cases, the new product was on the market only a short time before it was topped by a superior product introduced by a competitor, and rather than match the competitor's offer the company stayed too long with

its own improved version.

Let us turn now to the question of the rate of consumer acceptance, or, putting it another way, how much time was required to judge the success or failure of the innovation? In this case I tried to take the date on which there was general agreement among the management that the product was or was not a success, rather than the date on which a profit was actually earned or invested capital returned. In most cases a profit was not earned until one or more years after the date on which it became clear that the product was going to succeed, management often electing to plough sales revenues back into promotion and advertising, in order to establish the brand on a broader and firmer basis.

In this case the time required to reach a decision is expressed in months and is based on the number of months following the full-scale launching of the product; i.e., all consumer and market testing having been previously completed.

Time Required to Judge Success or Failure ^a	Percent of Cases
37 to 48 Months	10
25 to 36 "	29
19 to 24 "	21
13 to 18 "	20
6 to 12 "	11
Under 6 "	9

^a After completion of market testing.

In the case of new products, our experience would indicate that even after the product is a financial success, fully able to stand on its own feet, many years may elapse before its full potentialities are realized. This situation often arises out of the difficulty involved in finding the most suitable way in which to promote the product. In some cases a product appears to have reached its

ceiling—with volume at virtually the same level for many years—only to find sales suddenly increase remarkably in response to a change in media, or copy appeal. I have in mind the case of a household item sold by a West Coast company for over forty years on which sales had increased gradually with population gains. Many years ago they had hit on a marketing formula that was successful and had not altered it. In 1952 they purchased the *Nielsen Food Index* and began experimenting in small areas with a different medium. Sales increased substantially in these test markets. As a result the entire advertising philosophy of the company was changed and sales more than doubled within two years.

Perhaps more typical is the case of a Chicago company with which we have been working for the past seventeen years. This company has also employed the same advertising agency throughout this interval and the account has been serviced by the same man. By patient experimentation with its advertising, the company has raised its sales gradually year after year, without a change in the product. Long-range programs were set up to test all phases of the company's advertising—size of appropriation in relation to sales, apportionment between media, size of ad, size of headline, white space, copy appeal, etc., etc. Little by little more was learned about how to control and stimulate consumer behavior. The process has been a gradual evolution, and great credit is due to the agency account executive and to the company's management. All we did was to measure the consumer response to each change.

Sometimes, as in the case just cited, consumer sales gains are the result of

studied experimentation with the factors which have long been known to motivate buying behavior, and at other times they are due to chance variations.

One of the greatest success stories in American industry might never have happened if an alert Market Research Director had not spotted and correctly interpreted a minor sales shift in one territory. This particular company was a large one that had many successful products. In order to acquire a particular network radio show, the company had to take a station line-up that resulted in an overspending in one area—an overspending on the product, that is, based on their own past experience. The Research Director analyzing our bimonthly reports noted, as I have said, a gain in sales share in one area. Further reports confirmed the fact that merely adding to the weight of the advertising pressure would produce a substantial sales gain, albeit at a somewhat lower unit profit. He persuaded his management to increase its advertising expenditure, but to do it in a way that would conceal the fact from competitors.

Spot radio was selected, since it is virtually impossible to determine how much money is being spent by a company in this medium. The company's competitive sales position moved up over a three-year interval, from about 20 percent of the market to nearly 50 percent. To me this is a classic example of consumer behavior being favorably influenced through the increase in advertising weight. It appears that a certain sum of advertising money is needed merely to get above the general noise level so as to be heard and distinguished from the thousands of other products crying for a share of Pop's take-home pay.

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From what I have attempted to say so far it would appear that:

1. Innovation in product is a basic necessity under today's conditions.
2. Nonetheless, new improved products even when superior in performance are not always successful.
3. That periods up to four years appear to be necessary to be sure of the "product's ultimate success or failure."
4. That profits often cannot be earned on improved new products for periods of time longer even than four years.
5. That beyond this a product's full potential cannot be judged with certainty for many years because long periods of time are required to discover the best ways of favorably influencing consumer behavior.

If I have correctly stated the situation with respect to the rate at which consumer behavior can be changed toward product innovation, what then are the implications for persons like ourselves who are interested in the science of consumer behavior and what counsel can we offer to the busy corporation executive beset with many other problems, in order that he may conserve the assets of his shareholders and insure the long-term success of his business?

In the first place, I think critical self-examination must convince us that the responsibility for most new product failure lies with us, the Market Specialists, and not with the engineering staffs or with the efficacy of the products they have designed. The major difficulty appears to be inherent in the task of measuring consumer behavior for a new product or product innovation.

Looking back over the mistakes that have been made and trying to profit

from them, I should say that the most common error made by experienced managements lies in overestimating the size of the market for the new product. To the extent that we participate in the preparation of an overly optimistic sales forecast we are a party to the commitment of excessive amounts of hard-earned capital for plant and equipment. In addition, operating losses are apt to be heavy as sufficient sales volume cannot be realized to permit operations to reach the break-even point.

A conservative sales forecast, on the other hand, is less damaging. It means to be sure that the company's facilities may be too small and, therefore, the cost of manufacture somewhat too high, or perhaps that service to the trade is less than satisfactory. These conditions, however, can be corrected with time and sufficient consumer demand.

The worst that can happen as a result of a conservative sales forecast appears to be that the company passes up the market as unproductive and thereby misses an opportunity that may be realized by some other company later on.

The problems of preparing accurate sales forecasts are difficult indeed, even on established products, but they are magnified many times over in the case of new products or product innovations. The market research man understandably has considerable difficulty in designing a realistic marketing experiment for a product that exists only in the mind of some executive or on the drafting board in the laboratory of some inventor.

Responsible managements must realize that the market research man is not being capricious or uncoöperative when he asks for something to test that he can get his hands on—something on

which a realistic price has been placed, an advertising and merchandising campaign developed, distribution obtained, maintenance and repair facilities established, and the trade adequately serviced. At this suggestion many hard-headed business executives will rebel, and perhaps rightly so, on the grounds that while this would certainly be highly desirable, some estimate of market potential exploration must be obtained prior to investing funds in a research and development program, before in fact there is really any product to test.

Because of this fact, it is important, I believe, to differentiate between an initial investigation of a market on which funds may be earmarked for laboratory research and the later stage in which the finished product in one or more alternative forms is tested in a realistic marketing situation.

Perhaps the most critical stage of an entire innovation program is the drafting of appropriate specifications for the research and development department. The analyst concerned with consumer behavior must at this stage draw upon all manner of experience that could possibly parallel that to be expected from the new product. He should collect information from all sources. The managements should not flinch at this stage in providing budgets for this purpose. In the food-drug field, with which I am particularly familiar, a number of the most successful companies are continuously purchasing historical data from us covering markets they are not yet in, studying them closely for opportunities for new products or for the application of new marketing methods to old products.

To be sure, this costs money, but it also results in the sharpening up of the

work of the research and development laboratory by enabling assignment of priorities and concentration on products likely to meet with consumer demand. Products closely related to those under consideration can be studied from a standpoint of building in certain generalized features that are meeting with wide consumer acceptance. For example:

1. Today's housewife apparently wants a product that offers her convenience in use (among other thing). This suggests the desirability of working on those items in the line that are least convenient to use. I recall, for example, a British product introduced to the United States market in a tube. United States manufacturers pooh-poohed the idea, waving it aside with the statement that nobody would buy that type of product in anything but a bottle. The success of the British product proved them to be wrong.

2. Now while the housewife wants a product that is convenient, men apparently want "to-do-it" themselves—to start from scratch. I hesitate to suggest that this situation may result from the fact that the typical woman's day is still considerably longer than the typical man's, despite all the laborsaving devices we husbands have purchased for them.

3. The analyst should also be constantly searching for markets that are growing. After all, what use is it to bring out a better product in a market in a long-term decline, and where excess production capacity already exists? A new producer entering such a market can only result in further depressing conditions, with attendant price-cutting, etc. It is obviously much easier to enter a market that is on the way up. The

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successful marketer is moving to a new line even before the peak has been reached, whereas the business failure often rides a declining market too long on the down side.

4. Those markets should also be studied that correspond to the existing marketing facilities of the corporation. A company whose products have a major appeal in big cities and metropolitan areas should avoid developing products with rural appeals, as their salesmen are not in a position to call economically on rural markets.

From what has been said, it is clear that marketing research must be creative: it must precede product research, otherwise we find the situation in which the market research man is merely handed new products already developed by the laboratory to test and select from. In order that marketing research may be creative and hence as productive as possible, it should be placed organizationally in the company close to the men or man responsible for the long-term profits of the business—the men who are getting paid to worry about what the company will sell five years from now, or what it can sell when it can no longer sell what it is making now.

In short, market research must take on the added functions of: (1) determining what markets are worth getting into, and (2) developing specifications concerning what types of products are wanted in these markets.

Until this is done, managements will probably go on spending \$15 to \$20 on product research for every dollar they spend on market research.

If we can do all these things, and they are far from easy, I am afraid that we still will not merit a brighter space

in management's sun until we have developed still better techniques for measuring and predicting consumer behavior. Meantime, we must avoid overpromising for the accuracy and reliability of our techniques.

A man who measures consumer behavior in the Atomic Age is fortunate indeed if he reaches forty without having one or more ulcers. To be sure, company executives responsible for profits want to bring out new products fast. They want reports yesterday. The researcher, in a desire to accommodate his superiors and/or clients, is pressed into devising short cuts, using small samples hastily constructed, often testing under conditions that are scarcely indicative of the true market conditions under which the product will ultimately have to compete. Under such circumstances it is hardly surprising when products fail to measure up to expectations. In the interest of sound research, efforts must be made continuously to slow down corporation executives by convincing them it is better to commit their organizations to products of tested value. In one sense the large companies can afford to gamble more often than small ones—can press the button earlier on the launching of a new product in terms of strict economic risk—but the damages that are done to large organizations when products are not "right" are subtle and may be more damaging in the long run for, like a cancer, they sap the strength and morale of the organization and if repeated too often can ruin the company by slowing down the driving momentum that comes only with repeated successes.

We practitioners of consumer behavior must also guard against our natural desire to recommend the design

of products that meet only the needs of minority groups. We are often too pre-occupied with trying to insulate our clients' companies from competition by locating minority groups within the buying universe whose exclusive needs can be catered to. This is not to say that many fortunes have not been made by catering to minorities, but if there is a bigger part of the market to be sold, why not direct the attention of the product development group to this segment, since a better product here will stand a greater chance of achieving a much wider sale and profit? Furthermore, it is becoming increasingly difficult to reach selected segments of markets with today's advertising media. The media that have evolved appear to be more suited to reaching the mass market, and if special groups can be reached at all, it is often done at excessive costs.

On the other hand, there are markets in which sharply divergent consumer requirements exist. In such cases it is usually advisable to develop an entry in both sectors of the market, in which case the company can relax since it can profit regardless of which type of product the consumer ultimately favors.

In somewhat the same vein, it is advisable to remember that every product must be sold by some advertising theme or sales message. Because of the differences that appear to exist in the basic personality structure of the populace, certain types of themes will attract some types of individuals and repel others. Consequently, no matter how superior the product, there appears to be an upper limit imposed upon its sale. In some cases the upper limit may be as high as 50 percent and in others below 25 percent. In such cases what

is really needed is two products similar in performance but with only minor or superficial variations, for example, different color, different type of package—the big difference being what is *said* about the product. The main point to remember is that we can easily be guilty of wasting money on product research in an attempt to develop new products superior to an existing product, when all that is really needed is a different advertising theme coupled with a minor variation in the product.

If we will keep these points uppermost in mind, I believe that we will be able to do a better job of supplying the product development technicians with specifications, and that the batting average of new product successes will gradually improve.

While products coming out of the laboratory designed according to our best judgment of what consumers desire will be helpful, we cannot afford to shortcut the full-scale market test stage. I showed earlier that it was not possible to judge the success or failure of a product introduced on the market in any short period of time. In half the cases studied, more than a year and a half was required properly to evaluate the product's performance after test marketing operations had been completed. For this reason it is necessary to test market products for a relatively long period of time. Six to eight months would appear to be the barest minimum—longer is even better. This apparent fact of life runs counter, however, to the attitude of executives, who fear that competitors learning of their new product will either steal it for themselves or will devise effective counter-measures. Executives understandably, therefore, wish to telescope this phase

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of the study of consumer behavior. This is usually a mistake, since enough time must be allowed to elapse in order for a trend to develop either in favor of or against the product. Furthermore, one of the most important parts of the test should be to determine how effective competitors' counterattacks can be, since these will have a profound effect upon the ultimate success of the product when launched on a full scale.

If we can be strong enough to withstand the natural urge of those we serve to press for decisions before consumers have been given a chance to make up their minds, we will, I believe, have contributed to a sounder estimation of the rate of consumer acceptance for a new product.

In conclusion let me say that while we have emphasized here the need for innovation of product superiority and particularly for the need to design products tuned to the wants of consumers, success may even yet elude us unless those subtle mysteries of marketing and merchandising have also been attended to adequately.

Chemists can copy the formula of the market leader, production experts can produce the identical item at virtually the same cost, but the sales results will often vary radically. What makes for success in the marketing of one product will usually not work in the marketing of another. There are many forces at work in the market place as well as in the minds of customers and prospects. Knowledge of consumer behavior is one of the most important ingredients. It is the missing line between the buyer and the seller. The seller needs a listening post from which the reactions of buyers and potential buyers can be collected. The buyer needs a conduit or channel of communication to the manufacturer so that his wants may be effectively interpreted and met in the form of goods and services; the conductor for both is consumer behavior. There is virtually no limit to what can be accomplished, not only in the sale of products, but in the progress of man in general through better understanding of the mainsprings of consumer behavior.

6

COMMENTS ON "CONSUMER PRODUCT ACCEPTANCE RATES"

D. M. Phelps

The central thesis of Mr. Nielsen's paper is that it is a long and essentially difficult task to place new products on the market, and that failure to achieve consumer acceptance is much more likely than success. Yet, despite a high failure rate, product innovation and introduction on the market goes on, apparently at an ever-accelerating rate in the American economy. General Electric Company, for instance, recently advertised that its new products have created 45,000 new jobs in the last nine years, and that "hundreds of new ideas are now being developed to keep employment high and help America to live better." Therefore, we might ask ourselves certain questions in regard to the motivation behind this wave of product innovations in the last two or three decades. Is it simply a response to the competitive situation? Is it a response to increased purchasing power, and, particularly, discretionary purchasing power? Is it the expression of an ingrained philosophy of management? Are business managers firmly imbued with the idea that product innovation is the

most desirable means to achieve economic progress and a high level of living? Do businessmen think that it is the preferred way to achieve high profits, stability of earnings, and economic survival? Or, is it simply a desire on the part of management to excel and attain prestige, both for the company and for its executives?

Each of these questions might be answered in the affirmative. It seems to me, however, that product innovation is largely an outgrowth of instability and uncertainty; instability of competitive position and instability, also, perhaps, unpredictability of consumer needs and desires. Businessmen are seldom sure of the position of their companies in the market. They are constantly seeking for stability, but stability is illusive in a free enterprise economy, and will continue to be so if there is effective competition. As Mr. Nielsen intimated, businessmen face a dilemma. To be sure that their products are technically sound and will be accepted in the market, Mr. Nielsen would advise businessmen to go more slowly and not to

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use short cuts on product development and product and market testing. On the other hand, the competitive situation may suggest that businessmen go forward much more rapidly and take a "calculated risk" that their products will be accepted and sell in large quantities in the market. Particularly for small value convenience goods it is not likely that information will be available that conclusively proves either success or failure in the market for a considerable length of time, perhaps for as long as three or four years, according to Mr. Nielsen. However, he believes that this time interval is gradually being reduced by more effectiveness in getting products on the market, owing to improvements in transportation and communication.

In addition to insufficient product and market research and the habit of proceeding too rapidly, Mr. Nielsen said that the responsibility for most new product failures lies with marketing specialists and not with engineering personnel or with the efficacy of the products they have designed. While marketing functions are often performed inefficiently and without sufficient imagination, still, in my experience, failures are more often attributable to poor designing, lack of standardization, or failure properly to determine the reasons for ineffectiveness of products then on the market. Frequently the basis for the difficulty is that proper organization for product planning has not been established within the individual concern. It has now been recognized that engineering groups, production, sales executives, marketing research and, per-

haps, other groups as well, have something to contribute to planning a product. Unless there is proper cooperation among these groups, and effective coördination of their activities, it is not likely that technically sound products, acceptable to the market, will be designed. The product-planning function needs to be segregated for otherwise it may be neglected. A departmental unit assigned this function should report directly to high-level executives, for authority is needed to secure coöperation from many other departments and to coördinate their efforts. Since World War II the importance of product planning has increasingly been recognized. It has often been called "insurance for the future." Product-planning departments have been established in many forward-looking companies at a high organizational level and are now operating effectively.

As Henry Weaver of General Motors Corporation said many years ago, "That which is needed is a closer harmony between the manufacturer's products and policies on one hand and the consumer's needs and desires on the other." The problem is to develop procedures whereby consumers' needs and wants can more readily be determined. Perhaps more discussions, such as these now being carried forward at this Conference on Consumer Behavior, are needed for the guidance of business executives. Surely they know altogether too little about consumer motivations and consumer behavior, and particularly about reactions to product innovations and developments.

7

SOCIOLOGICAL FACTORS FAVORING INNOVATIONS

Samuel A. Stouffer

Sometimes it seems as if there are almost as many theories of social change as there are sociologists writing about it. Some of these writers, wedded to a particular theory, are quite dogmatic. The monolithic cause of change through the ages is found convincingly to reside in ideology, or in geography, or in psychology, or in technology, or in some other single ography or ology.

To take one of these positions and argue it with force is rather satisfying and can win applause for subtle and profound thinking. To take an eclectic position is to invite doubts and confusion, and whatever clarity is achieved is likely to be equated with superficiality.

Since I intend to be eclectic, it may help if I begin with a parable. Let us call it the parable of the dead duck. The story is simple. A duck was shot dead by a hunter at daybreak in a Michigan marsh. Now the problem. What was the cause of the duck's demise?

Well, there is a physiological explanation. The duck died because of a hemorrhage, which left the heart no blood to pump. And there is a psychological explanation. The duck died because the

hunter was the kind of person he was—if he had had different frustrations in his youth he might not have become a bird-killer. We might take quite a psychoanalytic dive on this one, but let's skip it. And there is an ideological explanation. If the culture of Michigan were like that of some parts of India, the killing of a duck—or of any other animal, for that matter—would be reprehensible. And there is a geographical explanation. Note that our duck died in a marsh. No hunter probably would have been waiting for him on top of a hill. Finally, consider a technological explanation, the gun that killed him, a product of centuries of technical progress in the manufacture of lethal hardware.

Now the point of this parable is, first, that every one of these explanations of the cause of the duck's death is correct. And, of course, many additional explanations could be dreamed up. Second, the explanations are at different *levels*. The next time you witness a big argument in a bull session, just notice whether or not the argument is kept going by mixing up levels. Jones insists Smith's ex-

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planation is wrong, but Smith may be talking along a track at one level while Jones wants to restrict the discussion to his own level, which he claims is the only one.

All this has especially appropriate relevance to a discussion of factors in social change, in particular, of factors favoring innovation. I shall try, at least, to keep various levels of explanation differentiated. And I shall limit my remarks to factors favoring innovation in America.

Let us start with a complex of factors at the ideological level.

There is no doubt that the American cultural heritage with its Puritan ethic has provided, since our nation was founded, a climate of ideas favorable to innovation. My colleague, Dr. Florence Kluckhohn, has summarized comparative studies of cultures all over the world, by grouping the big guiding ideas of these cultures into a limited number of types of what she calls basic orientations.

To illustrate: Every culture has its own orientation toward time. Some look backward toward the past, like the classical Chinese. Some live mainly in the present, without either much tradition or systematic planning, like many Spanish Americans. It has always been typical of American culture that the basic orientation is predominantly future. Even if a family has not achieved too much in its own lifetime, there is hope that the children will achieve more, and each successive generation sees to it that its youngsters, on the average, get more education than the elders.

Somewhat akin to the time orientation is the basic idea as to responsibility and authority. In some cultures, which Dr. Kluckhohn calls lineal, deference is

to ancestors and the elders; in some, deference is mainly to the group or the community; in others, as in America, the emphasis is mainly on the individual. Extreme deference to ancestors or extreme deference to community opinion is in many cultures a major factor in resistance to social change.

One other orientation may be noted. It has to do with the kind of life activity that is most valued. In some cultures, including our own, it is work, achievement, getting things done. In some other cultures, the way leisure is used is more respected than the way work is done. Except in the Old South, there has been little of the country squire tradition in America. The fact that a man is more respected in America for his success in business than for his taste in the selection of fine wines has been deplored by some of our European friends. But it is the cultures that rate production higher than consumption which seem to be the innovators. One possible exception may be noted here, however. Insofar as innovations depend on basic science, there is something about the system of orientations that argues against American eminence. Pure science as such has no concern for the practical. We have respected an Edison more highly than a Gibbs—indeed, how many of us ever heard of Gibbs? Until recently, America was as far behind Europe in pure science as it was, and still is, in music or painting.

These basic orientations—eyes on the future, individualism, and respect for the practical doer, along, with other basic attitudes we might enumerate—all are factors favoring innovations in a culture. These orientations have not changed much throughout American history. De Tocqueville would not have

to revise very much today what he said more than a century ago in his famous account of American ways of thinking and acting. True, there are some persons who fear that our orientation toward individualism is weakening, with an increasing pressure to conform, not to past ideas, but to the current ideas in one's community. There is an alarming intolerance of nonconformity, as was shown in a nationwide study I published this spring in my book *Communism, Conformity, and Civil Liberties*. But also most encouraging was the finding that local community leaders, as well as the better educated and the younger generation, were more tolerant of nonconformists than were the rank and file, the lesser educated, and the older people respectively.

There are some writers who would account for American hospitality for innovations solely in terms of ideology. But let us remember the parable of the duck and look at some other levels of explanation.

There is our geography, for example. The Indians did not accomplish much with it, but it has been wonderfully adapted to a people endowed with the cultural orientations just described. The climate, the soil, the minerals, and above all the vastness of the area provide the greatest economic base on earth. For generations the frontier beckoned migrants. This sheer movement in space is a most important factor with respect to innovations. People who live generation after generation in the same village are likely to be extremely hostile to new ideas or new ways of doing things. Particularly important is the tendency of newly married couples to live in communities different from their parents, with freedom to live as they please without the clammy hands of an older gen-

eration forever on their necks. The old geographical frontier is gone, but the richness and variety of American resources is such that mobility is as great today as ever in our history.

But geography by itself does little more than provide a favorable setting for a people whose ideology is receptive to innovations. We must consider the tools with which such people work. This brings us to the subject of technology and social change, and there are some who would explain all or most changes in the western world as a direct consequence of changes in technology.

Certainly, human nature is not much different today from what it was in the days of Homer. Geographic changes have been relatively slight since the last Ice Age. What has changed most has been technology. Inventions breed inventions and create new desires. They also create new problems and require further inventions in the social or political field to solve these problems. Look at the automobile, for example, and the revolution it has wrought in two short generations. Indeed, it is tempting to brush aside all other variables and deal with social change solely in terms of changes in technology.

Such a temptation gets us into trouble. Take such a great event as the mass migration of the Negroes to the North, which got into full swing during World War I. This can be attributed to technological change, but a simpler level of explanation would be in terms of the unprecedented convergence of two catastrophic events. At the same time as the boll weevil was destroying cotton in much of the old Black Belt, a labor vacuum was created in war-swollen Northern industries by the stoppage of European immigration. Northward into that vacuum poured the Negroes, their

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old precarious living already made more precarious by what was happening to cotton. The plausibility of this level of explanation makes us wary of attributing all important changes to changes in technology.

Nevertheless, the influence of inventions and changes in technology is so vast, so direct, and often so immediate that such changes deserve a central place in our discussion.

There is a good deal of writing on the sociology of invention, notably by Professor W. F. Ogburn and Dr. S. C. Gilfillan of the University of Chicago. I can do no more here than to allude briefly to certain aspects that relate to conditions making for slow or rapid innovations.

We start with the fact that almost all inventions are not completely new discoveries, like a hitherto uncharted island appearing before Captain Cook, but are rearrangements, and often rather slight rearrangements at that, of previously existing inventions. This fact is extremely important to keep in mind, for it means that the number of such inventions tends to increase at a geometric rate, just as the inherent tendency of organisms is to reproduce at a geometric rate. At any given point in time, the probability of a new invention tends to be directly proportional to the size of the technological base—that is, to the number of inventions already existing. Consequently, the pessimists who from time to time have pontificated as to the slowing down of the inventive processes have always been proved wrong.

It is with much confidence that we can say, if everything else is equal, inventions will increase at a geometric rate.

But everything else is never quite

equal, and the inventive process, though resembling the reproductive process in its inherent tendency to a geometric rate of increase, can be speeded up or slowed down in many ways.

For example, there is usually a long period of time elapsing between the first working model of an invention and its practical or commercial success. Enormous amounts of capital may be required for the development. The tremendous growth of research and development departments in almost all American industries today, with the resources to deploy whole teams of scientists and engineers on a promising lead, is sure to cut down the average time lag.

Sometimes an invention remains undeveloped for long periods because of lag in development of some critical component. For example, it is said that the jet engine would have appeared much earlier than it did, except for the inability of metallurgists to come up with alloys capable of withstanding unprecedented heat. However, as technological progress moves along all fronts, the probability is vastly increased that a new development, depending simultaneously on several of these fronts, will become speedily feasible.

One of the most ancient of proverbs says that necessity is the mother of invention. Like most proverbs this is at least a half truth, but necessity is a rather complex idea. Necessity can be very evanescent indeed. I remember when I was a boy, in a small town in Iowa, a local inventor came up with a triumphant gadget for cutting the river ice with a power saw attached to a Fordson tractor. He soon had a thriving business selling his outfits to ice houses all over the Middle West, aided by the effective slogan, "Keep the horse manure off the ice." Unhappily, just as need was

widely appreciated for his machine, ice plants everywhere collapsed, owing to the coming of the electric refrigerator, and our local inventor went broke.

Necessity, moreover, can be created where it never before existed. Never in the history of mankind has there been such a success in creating a mass demand for gadgets and shifting them from the luxury to the necessity class as is the achievement of American advertising and marketing. Today we are just in the infancy of a new era in mass communication, stimulated by the miraculous selling power of television, and in the future even more than in the past the old proverb is likely to be paralleled by the adage that invention is the mother of necessity.

In the interest of a balanced presentation, much that I have had to say is obvious, though I hope not to the point of boredom. To continue in the same vein, very briefly, we cannot of course overlook the fact that innovations that are costly will not succeed where there is no purchasing power. The South has needed summer air conditioners almost as much as the North has needed winter furnaces but, until the purchasing power developed, air conditioners, however economically produced and skillfully marketed, could not be sold in quantities. Purchasing power is one of the most important, even if it is perhaps the most obvious, of all the factors entering into our equation as to innovations. I shall not elaborate further except to point out that, in the last analysis, purchasing power depends primarily on man-hour productivity, which in turn depends on technology and organizational know-how. Included in the organizational know-how is not only that of management, but also that of labor. In the long run, technological improve-

ments in efficiency increase both total production and production per man-hour, but the short-run effects on a local labor force can be decidedly adverse. One of the hardest lessons our society is learning is how to compensate the temporary losers because of technological innovations so that they will not be motivated to resist innovations that have a long-run benefit to all society. This, of course, is only a special case of a more general problem, the solution to which is perhaps the best test of a democracy's strength—namely, the ability to achieve long-run general goals when their attainment damages short-run local interests. Happily, in the field of industrial production, our more enlightened labor leaders and management are showing ever-increasing appreciation of the fact that productivity is the key to purchasing power, and are coöperating increasingly to facilitate a productivity rise through greater automation.

At this point, let us now retrace our main ideas and see how they add up with respect to the outlook for innovations, at least in the near future.

We have considered four main groups of factors related to social change, namely, ideological, geographical, and technological factors, together with purchasing power based on productivity.

The ideological factors change very slowly; consequently, it is unlikely that any change in these in the near future will affect innovations. The only danger spot I see is in the area of individualism. It would be very unfortunate if the country became increasingly intolerant of strange or bizarre ideas. But there are grounds for optimism, as I indicated. The younger generation is more tolerant of new ideas than its elders; so are community leaders generally; and so

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are the better educated—with high school education and above. And education is in the process of a vast and unprecedented extension.

Likewise, the geographical factors are for all practical purposes a constant. We have seen how geography fitted so neatly the basic American ideologies to encourage technological development. There is no reason to anticipate a change. True, as we pointed out, the geographical frontier is gone, but there is no sign that mobility is decreasing—on the contrary, there is every reason to expect it to increase. And mobility, like education, breaks the cake of custom and encourages hospitality to ideas and things that are new and different.

By contrast, with the relatively static character of the ideological and geographic factors, we can expect the developments in technology to be highly dynamic. The crucial point to keep in mind here is the inherent geometric rate of growth of inventions, each of which is usually a rearrangement of two or more older inventions or clusters of inventions. It is increasingly less likely as time goes on that progress in one technical area will come to a standstill because another technical area is unworked—our science and engineering, fed by enormous investments by private industry as well as by the government and academic institutions, is growing fantastically along a long solid front. At the same time, the average time lag between first working models and final products is undoubtedly shortening. Moreover, the techniques and facilities for selling new products to a mass public are improving all the time—the latest shot in the arm being the potential opened up by television.

Any student of the theory of inven-

tions and technological change could hardly help being bullish, given these considerations, about a continuation and, indeed, an acceleration of the trend of innovations.

Actually, it is only when we look at the fourth and last of our four main sets of factors that we come up with a serious question mark. This refers to productivity and purchasing power. Since increased productivity and purchasing power are themselves so largely a product of inventiveness in technology and management, we ought to be in the clear here too. But not quite. If an atomic war came, all bets would be off. And even though some of our economist friends think they know how to prevent a major depression through wise use of government spending and controls, one can never be absolutely sure that a big dip in national purchasing power is impossible, even if rather unlikely.

However, barring war and depression, it does look as though the means to purchase, as well as the will to purchase the innovations that our technology is prepared to deliver, will continue to go up as man-hour productivity in agriculture and industry goes up.

We have been trying today to look at the big picture and not just one segment of it. It might have been more intellectually exciting to pick out one level of explanation—say, at the level of ideology, and explore it intensively with psychological and anthropological subtleties, and perhaps a discreet cry of alarm. But when, as in our parable of the duck, we look at not one but several levels of explanation, we are confronted with evidence that most of if not all the social forces seem to be conspiring in one direction—to produce a brave new world.

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COMMENTS ON "SOCIOLOGICAL FACTORS FAVORING INNOVATIONS"

Robert J. Eggert

I would like to point out that there are four factors contributing to innovation in the United States that were not emphasized in Dr. Stouffer's statement. These factors include:

1. A social and political organization that gives a high reward to the individual or entrepreneur who can find the means for producing something that consumers want—especially at a lower cost than competitors.
2. Our vigorous and energetic people, resulting in part from our temperate
- climate, but also from the fact that most United States citizens are descendants of individuals who had the courage and initiative to pull up stakes from their "home country" and the resulting hybrid vigor of their intermingling in the United States.
3. Our abundant supply of well-balanced natural resources.
4. Rapid increase in births, which has added new stimulus to innovation since the early 1940's.

FURTHER COMMENTS ON "SOCIOLOGICAL FACTORS FAVORING INNOVATIONS"

Irving Schweiger

Professor Stouffer in his wise and witty paper has indicated some of the basic characteristics of our culture and geography that encourage individualism and change. His stress is on the factors that encourage experimentation and individual trial. However, individualism alone cannot create mass markets for new or improved products. Successful innovation also requires conformism to center demand upon the newly introduced products. The basic problem in developing mass markets for innovations is the appropriate combination of individualism and conformism. Without a certain measure of individualism, it would be extremely difficult to persuade consumers to experiment, to be different, to try new things. Without a goodly measure of conformism, there is small chance of establishing the new product on a mass basis.

What may be the most appropriate combination of individualism and conformism for the mass acceptance of innovation is unknown at present. I would hazard the judgment, however, that consumers present a more readily avail-

able mass market for new or improved products now than in prior decades. In these brief comments, I can only indicate a few of the more important reasons for this belief.

Pressure toward consumer conformism on major matters tends to increase, it seems to me, as the character of the consumer population becomes more uniform and homogeneous. Notable changes in the direction of greater uniformity have taken place in recent decades. A substantially more equal distribution of income is one of the most pervasive and far-reaching influences. The range of factors in which there has been a significant lessening of differences among consumers may be seen from the following examples: near disappearance of illiteracy, virtual completion of electrification of United States homes, massive geographic redistribution of population, further development of instruments of mass communication, and growth in availability of consumer credit. Most of these factors have the general effect of actually putting consumers on a more nearly equal footing

in terms of capacity and taste and therefore tending toward greater conformism. In addition, there were some developments that fostered the spirit and/or the appearance of consumer conformism per se. The coming of the Great Depression discouraged conspicuous consumption and flaunting of wealth as unseemly in the presence of so much misery and hardship. This attitude of "keeping down to the Joneses" became further ingrained during the war that followed shortly thereafter with the spirit of equal shares and equal sacrifices. The special situations that called for exaggerated consumer conformism have passed but it appears that the attitude remains to a considerable extent.

Conformism in consumption has been fostered by many factors, some of which have been indicated. However, such conformism need not be static and result in unchanging patterns of consumption. Conformity in major respects puts greater importance on acceptable forms of expression which reflect individuality. Conforming in major respects to the Joneses, either by keeping up with them or keeping down with them, tends to intensify a normal desire to

keep different from the Joneses in some respects. One of the best and most effective ways of laying claim to individuality within a fairly uniform pattern of consumption is to be one of the first to possess or experience a new or improved product or service that is within the reach of at least some of the other members of the group. Rapid emulation by other members of the generally conformist group results in generation of pressures for members of the group to experiment anew. The group pattern of expenditure is thus in a state of rolling or dynamic conformism, paradoxical as these terms sound. It may be that one of the most important conformist influences in this country making for ready acceptance of innovation is the widely held attitude that change, innovation, constitutes progress and is "good." The process of change is currently fostered by record levels of real income that permit consumers in the mass to experiment and alter consumption patterns with a degree of freedom not before known. These factors lead me to believe that business today has a greater opportunity to innovate successfully for a mass market than ever before in our history.

PRODUCT CHANGES AND CONSUMER REACTIONS

Alfred Politz

As a researcher concerned with the many problems of consumer behavior, I am frequently approached by advertisers and agency men and am asked to seek out *the* reason why consumers behave as they do as regards their product or products. It would appear that these gentlemen are asking a legitimate question deserving of a legitimate answer. Unfortunately, this is not so. If it were possible to reduce the causal relationships accounting for consumer behavior to a single, easily describable reason, matters would indeed be very simple. I suspect that the linguistic habit common to superficial psychology of using the singular form, "reason why," serves to reinforce the prevalent expectation of a single or at least a single major reason accounting for any phenomenon. This expectation is so entrenched that often a research project will be assigned to that individual or organization claiming the "formula" for identifying the singular reason why. A researcher with even minimum knowledge of the cause-effect relationship could not begin to suspect the existence of this panacea. Rather, he would suspect that he would find a

very complicated set of psychological and mechanical causes related to the complicated effects singularly referred to as consumer behavior. He would further suspect that it is the relative strength, singularly and in combination, of these causes that leads to the purchase of a given product. For example, to describe the causes that lead to the purchase of Coca-Cola for home consumption, it would be necessary to refer to the taste of Coca-Cola, to the taste of other drinks, to the consumer's previous exposure to Coca-Cola, to the consumer's exposure to other drinks, to the price of Coca-Cola, to the price of competitive drinks, to the color of Coke, and the color of competing drinks, to the convenience of obtaining the various drinks, and to the convenience of bottle size with respect to carrying, storing, and serving the liquid. These variables by no means exhaust the list, but do serve to indicate the complexity of cause-effect relationships.

It is more convenient to store a quart-size bottle of Coca-Cola in the home than it is to store the familiar six-ounce bottle. On the other hand, the

association with pleasant (six-ounce) Coke experiences outside the home diminishes if a quart bottle is used in the home. To assume that there exists "*the reason why*" people drink Coca-Cola is fallacious reasoning. Rather, we must be aware that there are a multiplicity of causes, varying in strength and degree of controllability. What is required is an understanding of these factors so that action can be taken to improve the product and/or competitive position of the manufacturer. If we intend to discover the relative strength of the contributing causes we have to measure them. If we want to measure we must use numbers. We have to denote magnitudes. We must quantify just as researchers in the exact sciences must quantify. If we know that there are only 1000 high school boys who, for home consumption, want to drink Coca-Cola from a small bottle because of the pleasant association with away-from-home events of buying small bottles for their girl friends, and that there are, at the same time, fifty million men and women who don't buy Coca-Cola for their home because serving it to themselves and to their friends is too much of a bother, as compared to other drinks that come in larger bottles, then we have an opportunity to base a decision on consumer research. With respect to the causes mentioned we should introduce a large bottle and thereby expect an increase of Coca-Cola sales.

The fallacy that underlies the talk about "*the reason why* people buy" has done considerable damage to the progress of productive consumer research and thereby has done much damage to success in marketing. The causes, of which so-called "reasons" constitute a small portion, are acting in different

directions, partially benefiting and partially retarding the sales. If we do not know the relative strength of these causes we cannot compute the effect of a practical marketing action. One can perform a very useful function in marketing by having enough imagination to advance promotional ideas. But not everything that is good has to be called "research." In the case of Coca-Cola, a large bottle was introduced in eight test markets and later in other markets. Consumer reaction to the change in bottle size, resulting in an increase of Coca-Cola sales in these areas, has created a sensation in the soft drink field.

As in the physical sciences, the term "research" with respect to consumer behavior must be kept unsullied. Research includes testing of hypotheses, it includes measurement, it includes quantification. It includes a predictive function. A prediction of a consumer's reaction to a market measure is not possible unless the strength of the causes under question are calculated. The principles of design and interpretation are always the same whether we deal with physical or with psychological magnitudes. To calculate the relative strength of the causes is a "painful" procedure and constitutes the main portion of research costs.

Hypotheses-gathering, in and of itself, must not be regarded as research. A relatively productive, qualitative investigation will usually yield information suggestive of a host of hunches or hypotheses. The procedures leading to the hypothesizing of behavior causes are usually rather simple. In fact, any journalist with conversational talent can, by means of talks with friends and strangers, arrive at such causes. It is not too difficult to hypothesize social and psychological causes related to consumer be-

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havior. For example, among teen-agers, Coke, to a large extent, functions as a catalyst in much the same manner that etchings and cocktails function as catalysts for grown-ups. The pleasant associations with the Coca-Cola drink and the Coca-Cola bottle carry over to the home. Thus, we hypothesize that adherence to the traditional bottle will assure the success of this product in the home. To act on the basis of this and similar hypotheses, we now know, would be foolhardy. Having gathered the hypotheses, the investigator who wishes to be a consumer researcher now is confronted with the real task. He has to measure the relative strength of the various hypothesized causes, that is, establish their relative merits, in order to predict the effect of a deliberate change in the causal situation.

The title of this conference includes the word "behavior." Behavior is the thing that interests us in a marketing problem. Behavior includes the reaction to a marketing measure. A reaction is not a preference and not an opinion, although preference and opinion may influence reaction. It is not the purpose of a marketing procedure to satisfy people's likes and preferences. The purpose of a marketing procedure is to take advantage of existing preferences in such a way that business profits from it, or to reshape and change existing preferences in such a way that a business advantage can be affected by the change. That is, the purpose of a marketing procedure must be the control of consumer behavior.

After our consumer research convinced the Socony-Vacuum Oil Company to change its name to Socony Mobil, our next concern was related to the signs identifying Mobilgas stations.

Our legibility tests had shown that Mobilgas signs could be read at a distance of 420 feet; while signs of several other brands could be read at a distance twice as great. Of course, identifiability and legibility are not identical. For completely silent communication, a sign, a symbol, a trade mark is as good an identification as a pronounceable word. However, a large portion of communication affecting a marketing situation takes place on the verbal level. Mentioning a brand name and hearing a brand name are, in most cases, the most desirable contributions to an advertiser's position in the market. Because of Socony Mobil's complicated history in identifying nomenclature, the efficiency of brand identification was not as high as it undoubtedly would have been if the corporation had not been the result of fusions of several companies of different names. Socony-Vacuum thereby was more sensitive to the communication problem than the other big oil companies, and was more concerned than perhaps many other companies might be to improve the legibility, that is, the efficiency of the verbal message. Following our recommendation, the pictorial symbol, consisting of a red Pegasus, was reduced to a small ornament, thereby permitting an increase in the size of the word "Mobil" in the same number of square feet.

The attempt to get a consumer's attention and the attempt to make him like the advertising most likely account for the greatest proportion of inefficient advertising. The ideas surrounding attention-getting and like of advertising are as superficial to advertising as the idea that the earth is a flat disk is to an understanding of geography.

As a by-product of our legibility tests, some interesting light was thrown on the relationship between fallacious advertising theory and consumer reaction. When the new signs were tried, tests showed that we had doubled legibility distance. In other words, what we had aimed at was achieved. In nonstructured interviews related to station signs, respondents were found who "regretted" the omission of the red Pegasus because the "Pegasus is so nice looking." Others commented to the effect that "attractions attract." No doubt the respondents who said so believe both statements. No doubt a red Pegasus is more pleasing than the word "Mobil." These responses, while they are true, are just an expression of the public's basic "feelings" of a vague form of rationalization related to advertising. At the moment the interview takes place, the consumer, of course, is not under test in regard to the attention-getting ability of the Pegasus. The interview itself makes the attention-getting test impossible because it is the interview that calls the respondent's attention to the Pegasus. However, even if we assume that the consumer's opinion about the attention-getting quality of the red Pegasus actually is correct, his answers still do not constitute an answer to the problem, the problem being to make more consumers say "Mobil," to make more of them hear the word "Mobil," to make more of them read the word "Mobil," to provide more opportunities for more of them to see on the road the locations where gas with the name "Mobil" can be bought. Consumers must be made to like the gas and buy the gas. In order to make them like and buy the gas, one might very well have to sacrifice the "like of the advertising" related to the gas.

The problem of liking the advertising exists only to the extent that advertising should not be disliked. Once it is not disliked the communication lines are free. To make advertising liked can easily interfere with the like for the product. If Socony Mobil wanted to sell station signs, then the sign could be designed in accordance with the aesthetic preferences of the consumers. However, if Socony Mobil wants to sell Mobilgas then the sign must take on the characteristics of a communication device in a manner similar to a road sign. We can, for example, observe the public's expressed preferences to two street signs. One street sign has on it the words "Main Street." The second sign pictures a scene with trees and mountains with the words "Main Street," relegated to a few square inches of the sign. The aesthetic desires of the public are found to lean toward the scenic sign. If the public believes that a street sign should be attention-getting and liked, the scenery will be chosen. On the other hand, if a street sign should serve to notify an approaching motorist that Main Street is the next intersection, then, regardless of aesthetic preferences, the sign with the simple letters must be selected. We have an analogous situation if one shows the public a Mobil sign with the word "Mobil" and a second sign with the red Pegasus, the word "Mobil" appearing in an inferior position. Since the public considers "liking" and "attention-getting" to be the purpose of advertising, the red Pegasus will be preferred. The public has the right to err, but the researcher does not have the right to accept the consumer's erroneous "theory" of advertising. Anyone wanting to make advertising his occupation should examine the advertising

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mechanism in an analytic fashion, once he enters the field. It is interesting to note that some advertising "experts" behave on the basis of a fallacy. Such an individual believes that prior to entering the field of advertising, his own consumer opinion corresponded to his consumer behavior. Now, as an advertiser, he thinks that following consumer opinion as regards advertising will lead to great achievements. It is this very advertiser who must be made aware of the fact that it is not the purpose of advertising to be remembered, admired, or liked. The purpose of advertising is to push the product into the foreground, to make the *product* remembered and liked and thereby bought. Attention-getting is useful only insofar as the right people are attracted and insofar as the serious message itself is not devaluated by the attention-getting means. The communication conveyed by a "less preferred" advertisement can be extremely successful in increasing consumer purchase of the given product, whereas the communication conveyed by an aesthetic masterpiece might contribute but slightly to the sale of the same product.

There seems to be prevalent a supposition that the analytical mind and the creative mind are basically different. Closely allied with this idea is the belief that science is more analytical than creative. In reality, all scientific progress is characterized by creativeness and imagination. So is all productive research. The design of an experiment is a creative operation. The development of a hypothesis is a creative operation. Consumer research that starts with weak imagination may still arrive at a valid design. However, it is unlikely that it will be productive.

There are situations where the nature

of a problem is such that utilization of informal interviews is advisable. Such informal interviews, which are, for all practical purposes, nonstructured and only slightly directive, are often called depth interviews. I suggest that we drop this highly promotional term. The term serves a promotional function because it has so often been associated with digging into the unconscious. In reality, all responses in a depth interview take place on the conscious level.

In the field of sanitary napkins, our regular client is International Cellucotton Products, the manufacturers of Kotex. In investigating problems related to products of this type, the use of semidirective interviews tends to alleviate the embarrassment, inhibitions, and taboos surrounding product usage. Too often, however, the temptation to use informal interviews exceeds the justification of their use. Underlying this state of affairs is the problem of design. If a researcher lacks the interest or ability to design a questionnaire, he may be too willing to resort to nonstructured interviews. Insufficient understanding of the problem of design, to a large extent, seems to be responsible for the idea that a question is less apt to "dig into the depth" of a consumer's mind than the allegedly free associations of a semidirective interview. While there are situations where the semidirective interview is preferable, it must be emphasized that in other situations a rigidly structured interview based on a rigid design is capable of uncovering a causal mechanism so deeply "buried" that no depth interview could reveal it. We must see that research in science includes, of course, quantification. We must see in an answer nothing but a response and in a question nothing but a stimulus. And we must not

think that the truth of a respondent's report is more important than the untruth. There are cases where the so-called truth is important. There are other cases where the untruth itself becomes the measurement of something, for instance, prestige.

In the automotive field our regular client is the Chrysler Corporation. Several years ago we became concerned with the problem of style and appearance. Measurement in this area is not as easy as one might suspect. For one thing, the aesthetic evaluation of an automobile need not coincide with the desire to purchase. For example, a person might actually like a particularly flashy style and yet would not like his friends to see him in such a car. Taste or preference is acquired, that is, it must be learned. At first, an individual may express dislike of a particular thing, but then gradually grow to like it—this is what happened in the case of Cadillac's fishtail. The ambiguity and fluidity of the concepts surrounding public reactions to style placed me in the position of wishing to convert the problem into one that would preclude any kind of aesthetic judgment on the part of a respondent. In view of the fact that the costs accompanying a complete style change run into millions of dollars, it became imperative that we obtain an objective measure of style.

The measure decided upon was that of frequency—the frequency with which one observed a car of particular make. Two assumptions were necessitated:

1. The frequency with which one observes a car of particular make is related to the number of cars of this make on the market.
2. The frequency with which one observes a car of particular make is

related to the attractiveness of the car.

The latter assumption was, of course, specific to the situation and by no means general; in cases of extreme ugliness, for example, one might predict a high frequency of reference to the ugly object. In reference to new automobiles, it appeared unlikely that sheer ugliness would play an attention-getting role. Granted our assumptions, we had an opportunity to obtain a measure of attractiveness by comparing the frequency of observations of cars of particular make to the actual number of cars of this make on the market. We did just this. We inserted in our questionnaires an embarrassingly simple question: "What make automobiles do you see in this neighborhood?" Correcting for the frequencies of existence of the various makes, we found out that Plymouth has but half the "visibility index" of Ford and Chevrolet. Cadillac, as one might expect, had an exceptionally high visibility index. Advertising plays less of a role in the automotive field than it does with products such as soap, cigarettes, and drugs. Rather, the mobile product sells itself to a large extent. Every car on the street is a piece of rolling advertisement. At the time of this study, it could be concluded that the scarcity of automobiles accounted for the fact that Chrysler sales were holding their own, in spite of their visibility index (relative unattractiveness). One was forced to predict that the moment the supply of autos became plentiful, Chrysler sales would fall off substantially. The Chrysler Corporation went into preparations for a new look. The radical restyling of an automobile requires several years of work. The sales drop occurred in 1954, but the new

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Chrysler line had to wait until 1955. Consumer reaction to product change was demonstrated, in this case, when the emergence on the market of the 1955 Chrysler line resulted in a quick recovery from the 1954 sales drop.

I would like to call attention to the simplicity of the direct question and the wealth of information produced by it. The consumer, who reports the cars with a frequency that is incorrect (that is, untrue) as compared to the cars in existence, is not conscious of this incorrectness. I would also like to call attention to the fact that questionnaire design betrays itself to someone who just looks at the questionnaire. Only the one who designs the questionnaire can know the purpose of a question. It is impossible for an outsider to look at a questionnaire and conclude from it its purpose and thereby its usefulness. The enormous depth of the causal jungle behind consumer reaction to a product or to a sales message makes it, in most cases, hopeless to arrive at highly productive research findings without the use of structured questionnaires.

Referring back to the title of this speech, "Product Changes and Consumer Reactions," I hope that the various examples serve to point up the following facts:

1. Consumer research is not necessarily favorable if one does what the consumer thinks should be done.
2. A large portion of the demand for so-called depth interviews is attributable to the illusion that the forces the researcher has to understand are buried secretly in the mind of the consumer.

In reality, very often the most important forces that govern consumer behavior have to be understood as the

mechanics of the human mind, rather than the contents of it. The trap that many a psychological discussion falls into is the misunderstanding of the unconscious as the hiding place of things of which a person is not conscious. Needless to say, Freud's analytical powers kept him aloof from such fallacies. A person is not conscious of the light intensity diminishing by the square of the distance. Not being conscious of it does not mean that there is a picture of this phenomenon in his unconscious. A nonexperimenter is not conscious of the causes that lead him to estimate incorrectly the sizes in well-known optical illusions, yet these causes are not part of his unconscious. The clinician is obligated to deal with the phenomena located in the unconscious of the Freudian sense. The consumer researcher cannot confine himself to the consideration of motivational phenomena conscious or unconscious. The consumer researcher's task is easier than that of the clinician in that he does not try to rescue the individual from painful conflicts. The consumer researcher's task is more difficult in being forced to predict and control consumer behavior even though the causes of such behavior are "deeper than the depths of the unconscious." The more difficult task of the consumer researcher is characterized by the need for instruments that do not serve a purpose in the clinician's hand.

The instruments that enable the consumer researcher to increase the success of a marketer or advertiser cannot always be borrowed from other areas of research. For the most part, we must develop such instruments. We can, of course, take advantage of the developments made in areas such as experimental psychology, statistics, economics,

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and sociology. The mere fact that too much pseudo-research in this particular field has been accepted as real research must not weaken a scientifically minded minority in their attempt to make the study of consumer behavior a science. Too often, the consumer researcher fails to make a study of the very phenomena to which consumer research is applied—that is, marketing, advertising, public

relations, and the like. These areas must be understood, in much the same way that an understanding of anatomy is prerequisite to a surgical exploration. Understanding the problem at hand, then we may function as researchers and as such, develop the methods, the tools required to objectify our investigations and required to establish our endeavors as scientific research.

11

AUTOS IN AMERICA¹

David Riesman and Eric Larrabee

So far as we know, though he lived until 1929, Thorstein Veblen never owned a car. During his years at Stanford, he drove an old mare, as lovingly described by R. L. Duffus in *The Innocents at Cedro*. Veblen, of course, was a functionalist, a believer in engineering, and a hater of show and waste. Probably he would have thought any kind of car needless, just as he thought furniture mostly needless and washed dishes, after they had accumulated a few days, by turning a hose on them. But it would be interesting to know what he would make of the role played by the automobile in America today.

Perhaps he would not quite have agreed with the late Justice Brandeis, who used to speak angrily of the way in which the auto gave the workingman a false sense of power, which he then dissipated on the streets. Brandeis felt that power should be *earned* through

activity, through character, not by pressing the accelerator. He was a Southerner, however, and shared many of the Southern Agrarian views toward industrialism—he hated Detroit as a symbol of all he thought wrong with America; his attitudes in this resembled Gandhi's. Veblen, on the other hand, admired industry and, having started life as a farmer, had few agrarian illusions; he would not have begrudged power to the workingman. He would only have hated to see him seduced, as Veblen would surely have seen the buyer of current cars to be, by glamor.

To find a car today that Veblen would not have despised, you would have to go to the civilian Jeep or perhaps the Volkswagen. He would doubtless be dissatisfied with the Willys station wagon for making too many concessions to the human propensity for surrounding useful objects with sym-

¹ This paper is drawn from an address by David Riesman at Carleton College on April 20, 1956, and from Eric Larrabee's "Autos and Americans: the Great Love Affair," in *Industrial Design*, II, No. 5 (October, 1955), 95-98. We are indebted to Reuel Denney for helpful suggestions.

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bolic overtones, or to that even more human tendency to let means to an end become ends in themselves. He would find at present that even *Consumer Reports*, long a Veblenian stronghold, was beginning to abandon functionalism in its criticism of commodities, so that an Oldsmobile or a hydramatic transmission—for all the waste of gas—can now enter its pages without being out-of-hand condemned.

Nor could he attribute these departures from a strict functionalism simply to the chicanery of auto-makers; for he would have to observe that those few companies that have survived—out of the estimated fifteen hundred that, since 1893, have attempted to produce trade-marked models—were those that learned to obey the whim of the consumer rather than the Johanssen gauges of the engineer. True, the industry has succeeded in bureaucratizing the consumer's whim, an archetypical Detroit achievement that will be one of our chief concerns in these pages. But the engineer has had to take second place to the designer and the market researcher, while the auto itself has come more and more to conceal its ancestry in surface transport and to engross a panoply of hitherto unrelated images—of a living room, a juke box, a jet plane, or even (in certain hard-top models) a bathroom.

Henry Ford, unconscious Veblenite that he was, held out as long as he could. His Model T sold for as low as \$290 in 1924, when the number of cars on the scene varied greatly in performance and price, some of them selling for fifteen times as much. These prices reflected the separation of American classes, as well as other disparities—between country and city, with their di-

verse clearances and road conditions; between men, mechanically adept, and women, mechanically prissy; between the Stutz-Bearcatted, coon-coated young and their sedate parents, driving Marmons and Pierce-Arrows; or between doctors wedded to their air-cooled Franklins and salesmen who swore by their sturdy Studebakers. Ford made no effort to accommodate such variety through style or color, let alone appeal to the small minority who wanted and could afford, a generation ago, something more than transport per se.

His son Edsel, reared regardless of parental disapproval in contact with Grosse Pointe luxuries, tried to persuade him to abandon the Model T and compete with Bodies by Fisher, but for a long time without success. The elder Ford insisted with Veblenian severity on putting technology first; he preferred to hang around the shop, or pass the time with his odd-ball buddies, rather than in any office with industrial designers or students of consumer behavior. (There is a story of Edsel bringing a new and gaudy Lincoln to Dearborn, and his father walking by it without a word.) Old Henry, moreover, had as little love for trim and whim in the plant itself as in the car. He despised the white-collar worker or, for that matter, any appearance of methodical management. He preferred creating deliberate confusion to letting his trusted subordinates forget their dependence on his own intuition, and he never lost his canny rural mistrust of bookkeepers and banks. These two he also linked with Wall Street, which he fought and detested, and he would be as aghast today to see his firm's stock on the market as to see his family's foundation investing in the social sciences.

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Yet history, which he had called "bunk," caught up with him before he died. It was largely his own doing. As the great innovator of the assembly line and the five-dollar-a-day wage, he was instrumental in creating an economy far too bounteous to be satisfied with the Model T. Like other Puritans, Ford himself was willing to reject the givens of history only on the side of production; on the side of consumption he had no talent, no appetites, no emulative envy. For his customers, however, as now in many underdeveloped countries, the automobile was the very symbol of an end to sumptuary traditions, a statement that things need not be always as they are. Machinery, seldom the neutral agent it is commonly said to be, redefines aspirations as rapidly as it absorbs them; and Ford's unending stream of inexpensive cars released exactly those demands that he had tried to stifle. The possession of a personal power plant under standing orders not only diffused a sense of infinite industrial potentiality; it made compulsory all the roads and auxiliary services that have since homogenized the auto market, bringing the country to town, penalizing the idiosyncratic vehicle, and admitting women and children to the act of purchase that had previously been a male prerogative.

As Ford's star declined, the one left shining was that of his exact antithesis: William C. Durant, the financier who had founded General Motors; a manipulator and organizer, noted for his ignorance of engineering; and a model of the Captain of Industry whom both Ford and Veblen feared and hated. Since he could control his galaxy of companies only by means of paper, Durant needed the rational accounting

methods that Ford did without; and, though no engineer, he could hire such engineers as Alfred Sloan and Walter Chrysler. While his two personal regimes collapsed, Durant left in GM an organization capable of responding to consumer pressure, and of granting increased authority to the department then innocently known as Art and Color. Though one would have expected the depression of 1929 to save Ford from the gaudier GM line, even the workman on relief insisted on having a car, so that 38 million were sold in the ten years after 1929, ten million more than in the previous decade; and during this same period, though some of the fancy machines in the high-price range gave up the ghost, the former low-price cars (including Ford's reluctant Model A and V-8) themselves became fancier—a process which, as we shall see, has continued since World War II.

Today, despite the prominence granted to past and present presidents of GM, the dominant position in controlling the car as a physical object is neither that of mechanic nor moneyman, but of designer. As cars became easier to make than to sell, their shape and color became major sales points, with the inevitable result that power passed from the engineers to what Detroit calls the Styling Section. This institution—GM's involves twelve studios and 850 persons—is the personal creation of Harley Earl, a vice president of GM and the first industrial designer to attain that rank, who established the principle that "appearance sells cars" as GM policy. Beginning with the 1927 LaSalle, Earl can claim to have designed a total of 32 million automobiles; more than any other individual, he is responsible for the auto's present

apotheosis as a piece of wildly imaginative metallic sculpture.² To take only one example of his commanding status, when he decided on a wraparound windshield for the 1954 models, he got it—in spite of the uncertainty of engineers that it could be mass-produced, in spite of the image distortion it produces at the sides, and in spite of the fact that producing it required fabulous waste and virtual command of the country's laminated-glass facilities.

To be sure, even today a social archeologist could find legacies of Ford and Veblen. For one thing, a covert hunger for visible and tangible engineering is reasserted in the sports cars and their imitators, in the tachometers of a Jaguar or the boast of Chevrolet's Corvette to have "instrumentation as complete as a light plane's." For another, while the image of the GM line is set by the Buick or to some extent by the Cadillac, the image of the Ford line is still set by the Ford, the cheapest car, to such a degree that in interviews made in 1953 for the *Chicago Tribune's* study of the auto market people spoke of the Mercury and even the Lincoln as a bigger Ford, where they would never speak of the Buick or Pontiac as a bigger Chevrolet.³ Moreover, even today Ford is willing to advertise itself in terms of mechanical "features" (as in a double-page spread in July 1956), despite the extensive consumer research that demonstrates the American driver's desire to be treated as a passen-

ger on a moving sofa.

Subsequently Ford has also conducted market research with the aim of developing the "optimum" personality for a new car in the middle-price range, since they wish to fill the competitive gap in the market which accounts, with postwar prosperity, for better than half of all car sales. Also, they have discovered that Ford owners do not graduate upward in the company line but think of the Mercury as more suitable for the flaming-youth trade than for the reliably rising bourgeois. Perhaps, under the impact of this research, the Ford engineers will finally give way to the designers whose job it is to translate private whim into public property. But naming the new car the Edsel, apparently by managerial fiat, represents a defeat for market research and a victory for Detroit's apparently invincible parochialism. Henry J. Kaiser was the last great individualist to enter the auto business and dare stamp his name on a car (before that the last "named" car seems to have been the Rockne), and his example is not encouraging. However such an assertive and sentimental decision was arrived at, it seems to have been made in defiance of every indication that the name "Edsel" is meaningless to most Americans, who could be expected to respond more readily to the connotation of elegance in some such name as Pageant, Jupiter, or Sabre.

II

We have already an illuminating case history of consumption and design in the past few years' experience of the Chrysler Corporation. Chrysler had always been engineer-controlled and noted for economy—Plymouth has been a

² See Jane Fiske Mitarachi, "Harley Earl and His Product: the Styling Section," *Industrial Design*, October, 1955; an issue devoted wholly to "Design in Detroit."

³ "Automobiles—What They Mean to Americans," A Study for the *Chicago Tribune* by Social Research, Inc., pp. 50, 53, 55, 57.

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taxi-driver's favorite—and at the same time it had suffered from premature streamlining with the Airflow model of the 1934 De Soto, just as Studebaker has recently suffered for its innovations in design, only to find them taken up by other companies in the irreversible process of homogenization. By 1950, in any event, Chrysler was falling behind, and it called the market research firm of McCann-Erickson to tell it what was the trouble.⁴

The interviews showed that people thought of the Chrysler line as well-engineered and sedate, an image that strongly appealed to a declining portion of the population but not to the new generations allied to the outgoing life, the two-level ranch house, and the two-tone car. Chrysler therefore took the big gamble of abandoning its shrinking group of fans and taking out after the GM pace-setters. Of course, it hoped not to lose its original following in seeking a new one; every designer's ideal is after all a car with so many built-in appeals that anyone can shape it in the image of his private dream. But Virgil Exner, Chrysler's director of styling, was given virtually a free hand in 1952 to design the 1955 "Forward Look"—though it may not be entirely ironic that in this abortive chase after GM it is the rear end of Chrysler cars that one frequently sees emphasized in ads!

What Exner did, as other designers had done before him, was to build into the car a set of compensations for a variety of social strata, age groups, and even competing whims within the individual. (Exner is himself the product

⁴ Plymouth, parenthetically, had earlier experimented in the use of semi- or pseudo-psychological advertising, a field pioneered by the late Henry G. Weaver of GM.

of conflicting experience: he left GM to work with Raymond Loewy on the first postwar Studebaker). Customers can rarely be consistent about their wants; that is, they are more likely to express a pious disapproval of excess chrome and horsepower than make purchases accordingly, and they are more fond of flirting with a desire than embracing it. Few can really want to pilot a jet plane, but many can safely sample the jet-age aura by having a design "based on" the Sabrejet—as the '56 Plymouth, in a double-page ad, stands silhouetted in front of an airborne F-86, or as a Ford stands next to a Thunderbird, which in turn echoes a guided missile. So, too, the consumer can be in tune with the future through his dashboard, which looks like an intergalactic control panel, and with his youthful past through the hardtop, which reminds him of roadsters and convertibles (a *real* convertible, like a real mistress, would be problematical). So, too, do several companies now emphasize safety often in the same sentence with praise for engines of fantastically dangerous and illegal capabilities—"New 225 or 210 horsepower safety surge V-8 . . . for more safety in passing and hill-climbing" (Mercury); "second-saving acceleration for safer passing . . . puts more safety and fun in your driving" (Chevrolet).

With all these internalized and overlapping attractions, there is little left for the salesman to do but mediate between the actualities of the car and moribund minority preferences in the customer. Here one of the present writers can speak from recent experience. When he reluctantly decided to turn in an early Plymouth station wagon for a new

model, being an unreconstructed Chrysler type, he was dismayed by the loss of the old squareback and its replacement by flaring fins. The salesman noticed this, and remarked that the fins helped locate the rear of the car in backing, a rationalization he must have hit on for quieting the Veblenian conscience of some customers since it was quite without factual basis (a more reasonable excuse, e.g., that the fins help to distinguish new models from old, would have been unseemly at the point-of-sale).

Market-research interviews suggest that the sales pitch often serves this useful purpose, soothing the customer in his self-indulgence by calling attention to features other than those in which he is most interested. People do seem to want both the crazy whimsicality of the Detroit package and an image of themselves as sensible, just as the first-time Cadillac buyer, made uneasy by his own motives, wants to be reassured by statistics about the car's economical gas consumption. Indeed, a great deal of advertising, contrary to what one might expect, is read after rather than before the car is bought, and serves to repersuade the reader that he has been wise and practical; Cadillac is well aware of this and its ads constantly pat the owner on the back for his good taste and rationality.

Of course cars today, in the neon-lit supermarkets of the bootleg lot, can also be bought on impulse, and are meant to be. This shift to high-turnover retailing is made possible not only by raised living standards and confidence in meeting time payments over thirty months (not long ago it was twenty-two months), but also by the fact that the cars are so much alike, and on the

whole such well-built standard products, that a customer does not gain significantly by deliberation. The old-line dealer, with the cornucopia of the assembly line upended over his head, has been forced to make way for the super-salesmanship of the new-style huckster who has little overhead but advertising. Though the customer's saving may be slight, what with the "pack" and inflated credit terms, he no longer sees the excuse for a conventional markup when he has largely sold himself the car, with an assist from the designer, on the basis of the gamut of appeals built into it.

But this buyer's security, as we have implied, is gained through a lowered range of choice. The difference between Caddy and Chevy is much less than it was in the 1920's; instead of lowering the price of low-price cars, as Henry Ford always wanted to do, more and more is built into them. Instead of keeping Chevrolet where it was, and allowing people as they made more money to get either a newer Chevrolet or a Pontiac or an Oldsmobile, Chevrolet itself moves up the ladder, becoming longer, flossier, and generally less functional. In a similar way the mass media also devote their revenues not to lowering costs but to beefing up the product, with wider screens for the movies and, for magazines like *Life*, ever-more-elaborate projects of four-color cultural diffusion. The automobile seems merely to have been more knowing and systematic in its effort to become a kind of moving platform of this American inflation, lifting as it is lifted, and carrying us all to heights of comfort and luxury quite beyond our other accoutrements, such as doctoring or schools.

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III

People are fond of their cars; they like to talk about them—something that comes out very clearly in interviews—but their affection for any one in particular rarely reaches enough intensity to become long-term. We find such attachments only among those groups that are not on the escalator of mobility—the Bohemians who boast their deviant vehicles as symbols of not-caring, the few antiquarians of cars (a bit like the jazz fans who will hear only Dixieland), and the declining elite whose Daimlers and Duesenbergs have a timeless look about them. Impermanence of value and appearance is what suits the auto to a prosperity ethic, as we have said, and it is in turn dependent on that most essential of Detroit devices, the biennial model change.

For if an automobile is to be traded in before it breaks down, it must have a sufficiently brassy allure to survive several bouts of ownership. Its design cannot be too virginal or take itself too seriously—it must appear airy and whimsical as well as solid and substantial; it must have the “reversible” quality of a game as well as the forward march of real life; it must have, as it were, one foot in reality and one foot out. Only in the “class” ads is the car a passport to palaces and playgrounds; elsewhere, neither owners nor designers have anything to gain from arbitrarily fixed levels of distinction. Better an auto should look temporary, with the shapes of models before and after it, year by year, stretching to the horizon, than look, like a Rolls or a Bentley, as though it stood for a terminal (or ancestral) point in time and career.⁵

⁵ In his remarkable essay, “What is American about America?” John Kouwenhoven

The forced obsolescence of annual change, changes not of engineering advance but of design and advertising gimmicks, carried mass production a step further than Ford had brought it. Henry Senior seems to have been attracted by the idea of an all-plastic car, made out of soya beans and other renewable resources, so that it could be used up and thrown away; but not by the idea of selling new cars both to people without cars and people without new gadgets—people whose old but still useful cars could then be disposed of in backward colonial pockets, within and outside the country, as TV sets can now be sold in Canada.⁶ Something similar is happening at last in the housing market, with the FHA attempting to encourage trade-ins and the inhabitants of the new suburbs buying houses as they would once have rented—with the intention of moving in a few years, regarding their mortgage payments as rent, and keeping an eye open for the new model house with the more fully equipped kitchen or the extra bedroom demanded by a new sibling rival.

We cannot emphasize too strongly that the annual model change has thus opened up production decisively to non-engineering concerns—to innovation

discusses the characteristic additive pattern of our gridiron city plans, quarter sections, jazz, skyscrapers, comic strips, and so on; the new car models, one coming after another, have a similarly satisfying regularity of march. See *Colorado Quarterly* (Spring, 1954), and *Harper's Magazine* (July, 1956).

⁶ The annual model change also accostomed the industry to constant retooling, so that in World War II it was able to shift over to bombers and tanks more rapidly than anticipated. Once again, GM showed greater facility than Ford, whose Willow Run plant managers were compelled to plead with the Air Corps to “freeze” the B-24.

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oriented around design and style, like the cyclic variations of fashion in clothes.⁷ But it has served even more importantly to "bureaucratize whim," if we may now define the phrase, by subjecting fancy to periodicity—the periodicity of the tax return, the annual inventory, or in domestic planning the yearly decision (possibly conjoined with the purchase of a car) as to where to go on vacation. The regularity of the choice precludes all but a small degree of disconnected whimsy. George Katona and his colleagues of the University of Michigan's Survey Research Center are even able (though within limits) to predict who will buy cars in a given year on the basis of a questionnaire concerning consumer finances and family hopes: people buy cars when they feel that next year will be as good as, or better than this, so that the demand curve is psychologically a fairly malleable one, assuming that the limits of "saturation" are yet to be explored. To that extent, what is good for GM is good for the United States, and vice versa.

Whim can be called bureaucratized in so far as maker and buyer conspire to channel it within mutually manageable limits, preferably those, like fashion and unlike engineering, that are resistant to irreverent iconoclasts like the elder Ford. The effect of limited maneuvering room is most evident on the dealers, who clearly feel caught between the customer who sells himself if he smells prosperity around the corner and the

⁷ On the other hand, as Peter F. Drucker reminds us, cars are not sold by appearance alone so much as by a total image in which design plays a related part to function and price, especially "real" price (based on second- and third-hand sales) as opposed to list price.

manufacturer who has done his best, three years ahead of time, to prefigure the hundreds of technicolor-and-box-top configurations the customer will want. In their lachrymose outburst to congressional investigators, these normally Republican free-enterprisers begged for governmental controls and even price support; their love of laissez faire, like that of most businessmen, being quite platonic. If and when the dealers catch up with the unions, and secure the equivalent of a guaranteed annual wage, yet another bureaucratizing pressure will have made the reliable anticipation of consumer preference more exigent than ever.

In general, one might say that the victory of designers has indicated that no one else can agree what a car is supposed to look like—even its own ancestors, as the case of Chrysler shows, can influence it less than its competitors. Packaging, as C. Hartley Grattan notes, now predominates over product. It would be an extraordinary thing, were it not commonplace, that a piece of hard goods weighing two tons and costing several thousand dollars should enter the realm of fashion with the facility of commodities much less costly and less intended to be useful. The resulting freedom of form has led to what many, including the authors, regard as the bloated design excesses of the post-war cars, their often egregiously vulgar profiles, and their moody changes in relationship of driver to road—getting rid of gear shifts and other connections to reality, including the wheel, now that power steering is upon us.⁸

⁸ For those who must drive in dense traffic, however, like cab drivers and suburban mothers, the lowering of strain soon seems a necessity. Columbia University's

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The designers, as we have indicated, seek to please everybody (and every motive within everybody) with these same wild metallic mobiles. Variations are left, except at the jalopy and Jaguar extremes, to accessories that escape the untutored eye and not to the enormous status gap that once separated the cars of rich and poor.⁹ Even though the car has long since become a traditional manifesto of self-definition—almost as effective as accent, house, or clothes—the gradients of its prestige system have been so flattened that a basic similarity can simultaneously attest one's democratic impulse. The effect is one of blurred boundaries between individuals, classes, products, and sexes. Not only do cars come to look like one another, and like other things, but other things come to look like cars, so that we need not be surprised at the proliferation of Cadillac V-emblems on refrigerators, or a recent ad in which a model carrying a two-tone TV set is herself wearing a two-tone dress.

It is easy, of course, to overinterpret the motives of individual car owners,

even those for whom polishing their cars has become a Sunday ritual as devoutly practiced as a leisure activity can be. But we think it is evident nonetheless that Detroit has successfully learned to exploit its customers' fragile and usually unspoken desires, their latent capacities for fashion and symbolism. Admittedly the manufacturers begin with an object that offers the intrinsic appeal of freedom—for adolescents, from parental planning and supervision; for the Negro, from Jim Crow; for married people, from their spouses; for a single woman, from the need for male escorts.¹⁰ If one of the attractions of the Western is the liberty of the cowboy to ride off into the sunset, leaving responsibility and complexity behind, the car, which doesn't even require saddling, is even handier. But what seems remarkable to us is how this invitation to masculine getaway has been retained at the same time that the trend from monotone to technicolor and from hard to soft, rounded lines appeals to the feminine. A similar trend in men's clothing, toward a mixture of the sporty and colorful, may be facilitating the process.

Needless to add, homogenization, with its merging of tastes from the several social strata, raises problems as well as solves them. For, if we have uniform tastes, where will we get models for next year? Formerly the Big Three took care of this by letting the small independents (especially Nash and Studebaker) do their pioneering for them or on occasion, as with Chrysler, pioneering themselves. (Studebaker-

¹⁰ One of our associates observes that for many men the woman who has her own car seems less accessible, has control of the steering, and is therefore sexier. If true, this augurs a decline in women-driver jokes.

Institute for the Study of Human Variation finds a similar justification for superhighways. See *Automobile Facts*, XV, No. 5 (June, 1956), 1, 4-5.

⁹ So small were the differences on some lines between 1955 and 1956 models that the auto columns of daily papers showed readers how to differentiate them, much as a philately column might deal with differently watermarked stamps (see *Cleveland Press*, September 23, 1955, p. 20). *Life* also provided a lavishly colored chart (January 30, 1956). For purposes of illustration, Jay Doblin of the Illinois Institute of Technology has had prepared a set of slides in which the two-tone pattern of one make is superimposed on the silhouette of another, with utterly confusing effects on any but the most fanatic car-watcher.

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Packard still claims, in a recent ad, to be "small enough and *flexible* enough to bring you the newest and best advances *now*—months and years before the rest of the industry.") But now that the Big Three look so much alike, both like themselves and like each other—and even permissible variants like the station wagon look neither like their prewar half-timbered Tudor incarnations nor their relatively functional postwar stage, but more like a Chriscraft—now Detroit has had to start creating deliberately its own minority cars. The Corvette, the Thunderbird, the Continental Mark II, and the Golden Hawk serve both to lend prestige to the line and to provide cars of the future that can readily be disowned if the future turns up somewhere else. That is to say, these experiments are intended to sound out consumer taste, perhaps to lead it, without committing the major lines—they are spies in enemy country.

European cars, which are models for some of these "American" experiments, can of course exercise a similar function. But we suspect that they will do so decreasingly as American taste backfires and takes on a defiant-minority prestige, like Jantzen bathing suits on the Riviera, in Europe. (The Hillman Minx has already gone two-tone.) There is some evidence for this, including the implication of a recent article in *Encounter*, called "I Dream of Motorcars," by the British artist Andrew Forge, who expresses his admiration for American willingness to design a car as though it were something else, as opposed to the British stuffiness of making cars that merely look like cars. What a curious cycle it would be if GM followed MG which in turn followed GM!

There is a further sense in which a

minority is essential to the auto industry, inasmuch as a fashion, once it is accepted by everybody, is no longer a fashion but is on its way out. A fashion requires a label—the "New Look" in clothes or defense policy, "Rock and Roll" in popular music, "Behavioral Science" in Academia. But if the label takes hold, then everything and its brother tries to crowd in on the success, and the label inevitably loses its distinctive meaning and attractiveness. The ground is then prepared for a sudden reversal of fashion, when a small group hitherto protected from the majority is discovered and labeled, and the process starts over. (We might add at this point that some interesting research has shown that those who own minority cars, such as the Studebaker, are likely to know other owners of the same make personally; they need close-in support, while those who own the major makes can draw support from the general environment.)

And one might even argue that the fashion cycle in auto design must sooner or later reverse itself, despite the desire of the industry to plan ahead for a series of minor model changes in the same direction, year after year. There are still objective limits on the governance of whim in automobiles as compared with, let us say, books or paintings. For instance, the silhouette can hardly be lowered further except (as in some new models) by reducing the diameter of the wheels. Cars are in this like dresses, which can only go up or down so far, in terms of hem or décolletage, and where there are, as Alfred Kroeber and Jane Richardson have shown in their history of these changes, long-term pendular movements of lowering and heightening, on which the year-to-year

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fashions play minor modifications.¹¹

So too with cars, which for a while can get wider and longer and lower, but when the limits are reached an abrupt change must set in, or some other part of the car must become the focal point of "progress." (Paradoxically, people have been getting taller while cars and ceilings have been getting lower!) So too with the secular increase in horsepower, 15 percent between 1955 and 1956, which has already reached, some engineers are rash enough to claim, a virtual limit. And so too, as the makers of the new Continental believe, the limits of what they term "informal" taste have likewise been approached, and sooner or later customers will begin to move away from the rounded, the gaudy, the borax, in search of "formal" elegance through restraint in line and color.¹² And our point here is only that, when such changes come, they may say less about the *Zeitgeist* than they appear to, and more about the "Brownian movement" of fashion per se.

The problem remains, moreover, of where minority tastes are to come from in a country where the range of choice is wider for many than it has ever been, yet the number of significant alternatives is actually small. We are struck, for one thing, with the relative lack of revolt among young people against the cars of their parents. They seem not to want

the ostentatiously casual and sloganized jalopy of an earlier day, nor do they want hot rods; they don't mind driving their parents' Buick and wouldn't be too unhappy with one of their own. In many cities, if not in a megacity like New York, no high school girl will go to a dance in a cab, or allow her own or her date's parents to drive her; the boy must have a car—and, what with dating beginning in the early teens, this causes more heartburn than any other social bottleneck. Yet it seems to stimulate no challenge to the adult hierarchy of styles and habits.

Though the car has for many years been a decisive counter in adolescent life, young people now seem more sedate and set in their car tastes; they also, again with minor exceptions, drive less recklessly—going steady as they are at fifteen, and marrying at 20 or 22, they are driving steady, too; and increasingly getting driving instruction as a part of their formal education. At the same time, whatever innovations have come from the hot-rod minority have been closely screened by Detroit, so that they again become a part of the process of homogenization—or "restriction by partial incorporation," to use Harold Lasswell's phrase—in which the rebels and those they rebel against can come to terms, say, in a high-powered Oldsmobile hard top that has gearing and carburetion taken from the drag-race fanciers, but about as much relation to a teen-ager's car of the 1930's as an automobile has to a bicycle. While they can still modify the cars they get, the young can hardly represent the shape of the future, as long as cars continue to represent youthfulness as part of their panoply of symbolisms.

Where else are we to turn? Actually it

¹¹ Jane Richardson and A. L. Kroeber, "Three Centuries of Women's Dress Fashions: A Quantitative Analysis," *Anthropological Record*, V (1940), 112-50.

¹² The Continental experiment has been illuminating, since it was always possible that a car of such overt snob appeal would appeal only to Upper Bohemians who could afford the snobbery but not the cash, whereas the New Rich apparently still prefer a Caddy whose vulgarity matches their own.

is not impossible, by avoiding turnpikes and main highways, to find minority car-cultures in the United States. One such is that of the Mennonites in north-eastern Indiana, who typically drive 20-year-old black Plymouth sedans. (Those who still drive black buggies are serviced by a Chicago manufacturer who, according to Everett C. Hughes, knows in detail the varying specifications, the shades of blackness, of the different ascetic and unworldly sects.) But cars require too much capital equipment to be made for a dwindling poor minority or even a dwindling aristocracy, which is in any event better served by Rolls Royces of whatever vintage. When their prewar cars wear out, the Mennonites will have no choice but to gulp and go democratic, buying Buicks and Chevrolets like everyone else, reassuring themselves that they have no control in the matter or that the vulgarities of the damned are equally deplorable.

Indeed, to protest too much is often as vulgar as the most vulgar of cars, especially when a system of status-grading invites the ploy of underplaying and penalizes those who take it too seriously. A characteristic anecdote of the present period is that of the aspiring Hollywood actor who sweats over the decision of what car to buy in order to impress his producer, only to discover that the latter drives a 1942 Lincoln. When a car has become that important as a positive or negative symbol, it has gained a functional autonomy of motives, much like that which one psychiatrist has observed among adolescent boys; believing it wrong to start dating until they have cars, they then become so involved in the care and upkeep of the machines that they have little time left for their dates (a theme implicit in some of the

scenes of "Rebel Without a Cause").¹³ Hollywood, too, can hardly provide us with models when it is so imitative itself.

Looking elsewhere—as, for example, to modern architecture, with its own wraparound windows, low lines, and push-button mechanisms—we are less likely to find one-way influences than the reflection of general tendencies, like the "cult of effortlessness," in several aspects of the culture at once. Since people who want automatic steering, windows, and seat adjusters often use their cars to go to and from eighteen holes of golf, it can hardly be that they can't stand the effort (even the increasing numbers who go from tee to tee in a golf-cart periodically swing their arms). More probably they enjoy that phenomenon which Professor Robert Spier of the University of Missouri has termed "overdesign," the building into a mechanism of more features than it requires in order to function. One can find this in the superrifles with which people hunt varmint, or the supercameras with which they hunt banal exposures, or the fantastic fishing equipment for teasing perch—or indeed wherever in this abundant culture one looks, including the pastiche overdesign of our colleges. The result has been to remove the car driver farther and farther from the engine, from the outdoors, and from the feel of the road, just as the king-size filter cigarette separates the smoker from his tobacco, or the superhighway eliminates any connection between the people on it and the local landscape or life, whether messy or quaint.

¹³ J. Hyman Weiland, "The Adolescent and the Automobile," *Chicago Review*, IX, 3 (Fall, 1955), 61-64.

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There are nonetheless among these general tendencies certain ascetic and Veblenian motifs—as, again, in modern architecture—which we would be rash to reject as irrelevant to car design. After all, the hot-rodders did challenge Detroit and, while their forays were absorbed and contained, the motives of their revolt remain unassuaged. (Today, one of the few gambits remaining to them is to strip a car of ornament and paint it black, presumably in memory of the late James Dean.) There is a constant undercurrent of American admiration for the lean and mean that has come to the surface in such items as Carl Sandburg's outburst against our "fat-dripping prosperity," the prevalence of personal guilt at being overweight revealed by calorie-reduced foods, Russell Lynes' raising of the question: "What's So Good About Good Times?" and the momentary willingness of the relatively Spartan army to attack the overbudgeted air force. It seems to us, moreover, that as Americans become accustomed to luxury it will lose some of its glamor, and that eventually cars that restore to us a sense of reality and functionalism may find at least a modest market. Affection for the Model T, with its adaptability to home repair, is not entirely a matter of nostalgia.

Naturally such cars will not appeal to the Negro for whom the bulbous Detroit product is his first victory over Jim-Crowded trains and buses, not to mention a substitute for decent housing; nor will they appeal to the factory worker to whom the car offers freedom not only to change jobs and drive to a plant fifty miles away but also to compete with the foreman for status satisfactions that the job does not provide. But such cars may appeal to the many

for whom "do-it-yourself" is a luxurious necessity, an approved opportunity to escape from onerous white-collar consumption patterns into semi-Bohemian self-reliance, or those who found in the postwar station wagon a welcome ally (the first all-steel exemplar, brought out by Plymouth in 1949, was half expected not to sell; it surprised everyone by rising in popularity to the point where hard-tops are challenged by the station wagon and nearly every company is making one). While it may be true, as Mr. Ralph Hansen of the Monsanto Chemical Company contends, that the ascetic modern house is mainly a masculine preference, which most older women with a taste for the frilly, the chintzy, and the comfy usually manage to defeat, we doubt that this is true among the college-educated younger generation, where it is the women who are the style leaders on behalf of modern architecture (if there is a sex difference in taste) and restraint is a weapon brought to bear by the upper-educated against the *nouveaux riches*, as Veblen in his irony foresaw.

Once the turn comes, if it does come, it will of course be the new fashion and almost everyone will accept it; but we must not overextrapolate such changes to indicate a revolution in American manners and motives. What the German sociologist Georg Simmel has to say about fluctuations in his great essay on fashion—in this instance, of clothes—is revealing, though here he is speaking of the swing toward extravagance rather than away from it:

Fashion furnishes a departure . . . which is always looked upon as proper. No matter how extravagant the form or appearance . . . as long as it is fashionable, it is protected against those pain-

ful reflections which the individual otherwise experiences when he becomes the object of attention. All concerted actions are characterized by the loss of this feeling of shame. . . . It is one of the strangest social-psychological phenomena, that many fashions tolerate breaches of modesty which, if suggested to the individual alone, would be angrily repudiated. . . . Fashion also is one of the forms by the aid of which men seek to save their inner freedom all the more completely by sacrificing externals to enslavement by the general public.¹⁴

Fashion, in other words, protects us from full awareness of how tasteless we might appear if we stood alone, and also protects our private judgment beneath our outer conformity. The message of the car is not an invitation to involvement; it says, like the famous Pillsbury ad, "Why not? and, if eventually, why not now?" in the effort to minimize the customer's anxieties in his purchase. Some anxieties among some of us inevitably remain, but they may have less to do with car marketing than with the consequences to society of making car possession a new kind of citizenship. At some time or other all of us must realize how crazy our auto-oriented culture must look to a visitor from elsewhere, and it is to the aspects of this culture other than the look and feel of cars that we now must turn.

IV

Most of us know, or suspect, how heavily our postwar prosperity, above its cushion of defense spending, rests on the twin supports of new cars and new suburbs; in fact, the latter depend pri-

marily on the former. The leisure life of these suburbs is inconceivable without the car, and the two-car garage is spreading even in the "tract" houses of the mass-produced suburbs—freeing the wives for sociability, shopping, and chauffeuring of children.¹⁵ In this connection one should think not only of the new suburbs ringing the old cities but also of those parts of the country, such as California, which may be regarded as suburban to the urban East. The car not only enhances the freedom of people to move west and southwest (and to Florida) but helps shape the image of the good life which these suburban states symbolize, a life in which at work or play one always has one's car beside one as a potential escape mechanism.

Increasingly, the same considerations have come into play in the urban use of cars as well, to the defeat and demoralization of mass-transit planning and finance.¹⁶ Our Colleague Mark Benney, questioning his fellow clerks at the Chicago Federal Reserve Bank as to why they invariably drove downtown, with all the congestion and trouble of parking, when they could just as easily ride comfortable commuter trains, discovered this same motive of the imaginary getaway. For they would answer

¹⁵ "Going our separate ways, we've never been so close," reads an ad for used Chevrolets which pictures a family threesome affectionately grilling hamburgers in front of a double carport. "No doubt you already realize that the family with two cars gets twice as many chores completed. Completed quickly, so there is far more *leisure* time to enjoy *together*." *Life*, May 21, 1956.

¹⁶ See Margy Ellin Meyerson, "Implications of Sociological Research for Urban Passenger Transportation Policy," Proceedings of the Thirty-fourth Annual Meeting of the Highway Research Board, January 1955.

¹⁴ Georg Simmel, "Fashion," *International Quarterly*, X (1904), p. 147. We are indebted for this reference to Professor Kurt H. Wolff of Ohio State University.

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that perhaps they might get sick, or their wives might, and they'd have to leave in a hurry. They seemed to have a sort of claustrophobia which was alleviated by having the space of one's own car around one—even in a traffic jam, in which one could sit and complain: why don't "they" do something about it?

So politically dominant is the automobile, in fact, that cities and states will tax and tear themselves apart in the effort to "do something" about traffic, but only through measures that facilitate (in effect, increase) the flow of vehicles, never reduce it.¹⁷ The result of each new palliative parkway is only to relieve some roads at the expense of others, inducing more people to drive more cars in an endless vicious circle. Astonishingly, this class engineering—for the suburbs, at the expense of the urbs—is rarely protested by those whom it disprofits. Aside from schools, highways are the only collective product not to be condemned as creeping socialism, or damned by nonusers (and the residual carless, privileged or poor) as offering no benefit to them. We doubt if the Hindu cow is more sacred than the American car.

And the car at the same time is demanding, impractical, and murderous. The possibility of cancer caused by cigarette smoking occasioned the manufacturers greater difficulty—and a

¹⁷ One of two proposals to relieve "the steadily worsening traffic congestion" presented to the Mayor of New York City by his Traffic Commissioner was to "penalize pedestrians who interfered with traffic flow." *The New York Times*, September 23, 1955. For a mordant comment on such measures and their consequences, see David Cort, "Our Strangling Highways," *Nation*, April 28, 1956.

serious setback to their stocks—than the actual casualties of the road have caused the car companies. A recent survey showed that at least one fifth of the population over the age of twenty-one had been in an accident in which someone was hurt; yet unless a local outcry about this is being made in the press, or by a politician like Governor Ribicoff of Connecticut, it is not taken very seriously. The grudging interest of manufacturers in safety devices seems intended mainly as compensatory sales appeal to the security-minded. We should add, especially in view of the evidence that only a small percentage of car owners voluntarily install seat belts or other self-evidently desirable equipment, that we regard most discussions of auto casualties and auto safety as a kind of titillation like horror comics, or the news stories of rail and plane accidents, or civil defense.¹⁸

Both the present writers have recently had all-too-personal illustrations of this. One of us, while attending army maneuvers in Louisiana as a correspondent, was involved in a head-on collision with a civilian car (driven by an intoxicated salesman of moonshine liquor) which had headed directly into the wrong lane

¹⁸ Characteristically they are illustrated by light-hearted little drawings or photographs of dummies, not real people, smashed up in cars. A case in point is the annual summary of accident data published by the Travelers Insurance Companies under the title *Misguided Missiles*, in which cartoons by Chon Day serve to draw the sting of the statistics ("Is it anyone we know?" asks the wife from the back seat, as her husband peers under the car at the body they have just run over). Among other interesting pieces of information in this macabre little booklet are the figures which show that in 1954 nearly as many people were killed or injured crossing intersections with the traffic signal as against it—18,010 as opposed to 19,170.

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of a two-lane highway. On his return from a field hospital that evening the press section of maneuver headquarters in a mock ceremony awarded him a "simulated Purple Heart," which was thought by nearly all concerned (the recipient included) to be a friendly and humorous gesture. It was none the less the effect of this incident to serve as a safety valve, to socialize the closeness of injury so that it need not define the auto as a menace or become part of a cumulative roster of indignation against the auto as an institution. Many accidents must be attended by a similar amnesia.

Our second example occurred when the other writer was shepherding a group of five children to the movies at a local art theater. Afterward the group came out of the theater and crossed the street, only to be nearly run down by a drunk and wildly aggressive driver who drove right into the crowd, which scattered for its life while he collided with a parked car. He would have driven off, shouting abuse, if some of us had not intervened; we managed to get him to a nearby police station, where he refused to take an alcohol test; he told the police he had had a fight with his wife, and he seemed to be taking this out on the car and the public. Next morning in emergency court, the writer and his children appeared, along with two policemen, to testify against the driver on a charge of reckless driving. The man could not believe it was not we whose car had been damaged, and he kept insisting to the judge that he would pay for repairs. This seemed to be all that concerned the State's Attorney, who lectured us for not crossing at a traffic light. No one but the disgusted policemen cared that the de-

fendant had been drunk and a highway menace; without even hearing their testimony, other than to ask about damage to the other car, the judge dismissed the charges.

No doubt many readers have witnessed similar scenes, and many observers have been impressed with the brutality and solipsism that the car allows the driver. Margaret Mead, in *Male and Female*, has commented on the way in which Americans use objects to intervene in their relationships with one another: one might think of card games in this way, or cigarettes, or Christmas cards. The driver of a car is completely surrounded by a nonsocial object, isolated from physical contact with others and yet completely dependent on and related to them, even when he isn't playing bumper tag. The traffic is a stream in which he can immerse himself without getting wet, so to speak. It is a group in which there are no sanctions that can effectively socialize him (though there are rewards of approval and self-approval, as we shall later see, for good performance), and he enjoys the right to snarl at other drivers while making the same independent decisions as to speed and direction that they in turn resent. A far cry from Thoreau, whose creative anarchism hurt no one.

A recent study of tourists on US Highway 30 through Nebraska, by the anthropologist Jack Roberts and his associates, indicates that these drivers are seldom aware of the countryside through which they travel, unless it is defined as "scenic," in which case they may stop for thirty seconds or so to take it in. When they do stop, they often get out of their cars too groggy and punch-drunk to walk, having for no urgent rea-

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son driven without a break from Chicago or the West Coast; their interchange with the roadside service people—gas station attendants, motel-keepers, etc.—is perfunctory; and back they get into their moving tube, in which they never can or do neglect a roadside sign, and receive more impressions of print than of anything else.¹⁹

One might compare the driver's decision-making process, moreover, with that of the airline pilot, whose complete control of his vehicle has been much differently institutionalized. It may often happen that people get on board his plane and he taxis out to the runway, only to decide at the last moment that the plane or the weather is not fit to fly. If it were only his own life he would probably take chances, since he would be subject to taunts about his honor or he would think that the noise he heard wasn't really serious. But he is responsible for the property, the lives of others, and for the company's reputation. He has judicialized himself and thereby destroyed the earlier image of the pilot as a wild and erratic fellow. The auto driver, on the other hand, has had no such judicial experience; he is oblivious as an individual to the death and damage he deals out as a class; and he considers traffic violations, somewhat like drinking during Prohibition, as licensed misbehavior. He is not an institution and no judicial process has taken hold of him.

And yet this is only part of the story. There remain judicious drivers, and already scattered elements of a highway

ethic are appearing in which "bad" driving incurs searing disapproval: one thinks, for example, of how the drivers of semitrailers manage to deflect potential hatreds of their monstrous impediments to joyriding by showing their skill and by observing elaborate courtesies. At the same time, there is a camaraderie of the road in which some of the car's gloss of roving masculinity rubs off on those who service it, so that their impersonal relationship to the driver can yet be highly sociable and they may lavish infinite pains on polishing his windshield in spite (or perhaps because) of the fact that they are never tipped. Garage mechanics, similarly, have promoted themselves to prestigious reputations by taking advantage of the felt need for their competence to relax and develop latent abilities as conversationalists and "characters."

The car culture, as such, can furthermore serve as an autonomous and cosmopolitan influence on the communities which it nets together. Thus merchants along a highway traversing many states may form a trade association in which their parochial interests are transcended by a common one in keeping the traveler on the route as long as possible. Thus do shopping centers tend to acknowledge their higher loyalty to the highway by staying open on Sunday, in defiance of local Blue Laws. The roadside stores and services form a sort of intranational PX. Just as the oil companies have recognized the long-term advantage of standardized facilities, to exploit the driver's longing for the familiar and predictable, thus also have the proprietors of eating and sleeping establishments progressively been compelled to upgrade provincial standards of sufficiency to the preset,

¹⁹ John M. Roberts, Robert M. Kozelka, Mary L. Kiehl, and Thomas M. Newman, "The Small Highway Business on U.S. 30 in Nebraska," *Economic Geography*, XXXII, No. 2 (April, 1956), 139–52.

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national levels of Duncan Hines or Quality Courts United, all of which, in spite of its effect on what W. H. Auden has called our "anonymous countryside littered with heterogeneous *dreck*," cannot be considered a total loss. And, too, it is precisely when one thinks of the ribbonlike roadside slums—not only of the man-made rural ugliness but of the endless aesthetic atrocity of our cities—that the auto itself seems least anomalous. However it may offend the aesthete or functionalist, against its partially self-created landscape it looks clean and neat, a thing of beauty and even of sense.

What we are suggesting here is simply that the impact on the driver of belonging to the automobile culture should not be underrated. While the car is both a source and an outlet of violence, it has simultaneously been a force for the softening of life and a reducing of violence among American adult males.²⁰ Warner Bloomberg, Jr., has observed that many Gary steel workers, when they marry and settle down, can no longer find the time and money for hot-rodding; they have to accept a new Chevrolet or a secondhand Pontiac as a utility wagon, since their income is going into new babies and home equipment, and their time into do-it-yourself around the house. As a result, the car is for the factory worker what lace curtains are for his wife. Driving to and from work in his chromed and polished divan, he is less likely than heretofore to get into brawls or spend Saturday night in a bar. The car is, as it were, a decompression chamber in which he avoids the bends and the benders in

making a transition from the all-male, working-class atmosphere of the plant to the mixed company and middle-class atmosphere of the suburban home, with its middle-class leisure pursuits of travel and gardening, and its violence piped in vicariously through television.

And here again we can see that the car, in its reciprocal relationships to individuals, both helps to homogenize the social strata and the sexes, and to represent in its appearance the degree to which this homogenization has progressed. Where its future seems to us less clear, and far more demanding of general reflection, is in the emerging array of institutional decisions made urgent by the car's impact on urban and suburban planning. To date, the car has revolutionized patterns of land use faster than theoretical conceptions of social time and distance have evolved to keep up with it, with the result that it bears many of the marks of an institution out of control, intractable to previous disciplines and impervious to moralizing. To be sure, it does have the beneficent effect of forcing choices (such as the eradication of urban blight) that might be further postponed, and it has stimulated the rapid and extemporized maturing of such seldom-promising devices as the shopping center, the motel, and the drive-in theater.

It is in fact our suspicion, current appearances to the contrary, that the automobile may eventually be the savior of the American City, since it has restored to the decadent downtown centers their lost potentialities for uniqueness—in this case, the potentiality of the auto's absence. The future of the city, that is, may lie in barring the car from a central core of concentrated facilities,

²⁰ For the argument that violence *has* declined, see Daniel Bell in *Fortune*, January, 1955.

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as the Goodmans proposed in *Comunitas* and Fort Worth now proposes to do, so as to increase both its accessibility and attractiveness.²¹ For the city-bred, it is disconcerting to discover how difficult it is in many parts of the country (especially the Far West) to go for a walk without being harassed by continual offers of a lift. It is perhaps symptomatic that even now a major appeal of living on Manhattan Island is freedom from the car, and though in this New York is atypical it may also be filling its traditional role of pioneer in new avenues of consumption.²² It was appropriately in New York that occurred the brave stand of embattled housewives against the destruction of their children's play space in Central Park to make way for a parking lot—an early and successful defiance of the omnipotent auto (and its agent, Robert Moses) that should someday find a place in history.

V

Let us in conclusion go back for a moment to Veblen and Henry Ford. "It was not accidental," as Christy

²¹ Not to mention value. Fort Worth's mile-square pedestrian enclave, with its access roads and six garages, would release to commercial use space that is presently worth \$30 to \$40 million. It is the work of Victor Gruen & Associates, designers of the magnificent Northland shopping center in Detroit. See *Architectural Forum, the Magazine of Building*, May, 1956, 146–55.

²² For an example of the urban logic, see John Lardner, "The Case for Living Here," *The New York Times Magazine*, April 29, 1956, p. 12. "New York's traffic crisis is fed by out-of-towners, including suburbanites, who are so fatuous as to bring automobiles into New York and to drive and park them there. The vast majority of New Yorkers are too intelligent and too considerate to use private cars in Manhattan. . . ." *Ibid.*, p. 44.

Borth of the Automobile Manufacturers Association has said, "that most of the pioneers in this field of endeavor were from the farms and the small towns of the land. They knew, by bitter experience, the grinding drudgery and the appalling loneliness which were all too much the most characteristic attributes of rural life in America. . . ." ²³ Ford himself, in his reaction to that drudgery and loneliness, became a man obsessed by time. As a boy, he repaired watches; as an advertiser, he chased speed records with Barney Oldfield; as a billionaire, he collected the past and put it in his museum at Dearborn; and, as a manufacturer, he came to understand that cost is a function of time and so to pace the assembly line, shaving seconds off the productive process—indeed, he was one of the first to understand that production is a process, as Veblen also understood, rather than merely the attempt to make things, let alone money. Yet his imagination was unequal to a world in which consumption would also be a process, the world he had himself helped create, a world which can afford to preserve under museum glass its memories of the pinched, utilitarian sparseness he sprang from and never quite escaped.

Today, however, the automobile is teaching its owners to consume, and its producers to produce, for a context in which the limitations of historical scarcity and meanness no longer apply. It is a kind of self-contained education in abundance. Very possibly the promises of an era of endless abundance are spurious; we may be unjustly extrapolating from the symptoms of boom prosperity. It may be that Detroit is

²³ Address to Centennial of Engineering, Chicago, September 8, 1952.

more wedded to cars than their buyers are, and will be unable to diversify successfully, despite Ford's missiles and GM's Frigidaires and Diesels; and it may even be that the increasing capitalization of the industry will require new cars to come out every six months, while consumers, though willing to make extraordinary adaptations, will be unable to keep up with this. But we are already having arduous difficulties in assimilating the incipient abundance that is already upon us. If we are to prepare for the possibility that abundance may increase, we will need all the experience with the improbable, or even the impossible, that we can get.

POSTSCRIPT: DECEMBER, 1957

We wrote the foregoing pages two years ago, just after the 1956 models had come out. We wrote before the first returns were in from the Chrysler line's gamble in plunging into styling rather than solid engineering as the principal basis for appeal: a gamble which brought them up from 13% of the market to 20%, drawing into their orbit many who would previously have bought GM products, and no doubt some "new voters" who might have bought Mercury (or, presently, Edsel) while at the same time alienating, though not always losing, the staid types who wanted the security of good workmanship rather than the flamboyance of fins. We wrote also, of course, before the Edsel made its overadvertised debut: a car in search of a character which would indicate at once its novelty, its sibling relation to the rest of the Ford line, and its "status personality" in competition with the hot-engine, lace-curtain melange of GM and

Chrysler's "medium-price" cars.²⁴ We wrote before both the Volkswagen and American Motors' Rambler had counterattacked in favor of small cars, leaving GM and Ford to send out feelers from their European satellites, while their executives sat around cursing Mr Romney of American Motors almost as severely and as insanely as they had attacked Walter Reuther in the summer of 1957 for his salutary plea to lower, or at least stabilize, the price of cars.²⁵

Plainly enough, even before sputnik, the leading automakers were uneasy as they faced the 1958 model season. With dual headlight assemblies they had cleverly managed the front-end obsolescence of every car on the road, much as fins had managed a rear-end obsolescence. Raising prices in a falling market, they had retooled even more heavily, advertised even more lavishly than usual. They had cultivated their dealers, seeking to keep up the profit margins of those small businessmen (small, but often quickly wealthy) who, in so many small communities, form part of the solid Republican cadre, opposing those policies of increased government spending and lowered trade barriers that might keep them afloat a

²⁴ For fuller discussion of the extensive market research involved, see Eric Larrabee, "The Edsel and How It Got That Way," *Harper's Magazine* (September, 1957), pp. 67-73.

²⁵ The violent response of the automakers to the Reuther proposals; the instinctive and unvarying assumption that they must all be propaganda and a trick; the moralistic attacks on him for creating inflation in the first place—these morbid and frozen posturings resembled all too closely the nearly simultaneous rejections by American officialdom, in and out of the State and Defense Departments, of Soviet proposals for a reduction of tensions in the Cold War and a halt to the testing of nuclear weapons.

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while longer.²⁶ And yet, the companies were terribly worried beneath their façade of prosperity, like people who have drunk too much too long and are waiting for the hangover or the ulcer. Pressure was being put on the market researchers to tell the designers what, in the future, people “really” wanted in a car, and it was even beginning to percolate into some Detroit offices that the customers might care less about cars (as illustrated by the lack of excitement over the Edsel) than they had appeared to care.

Sputnik heightened all this. While nearly every propagandist, for nearly every cause good or bad, hitched his wagon to that star, there were many for whom sputnik evoked the underlying asceticism we have discussed above—evoked, that is, the repressed ambivalence about the gaudier aspects of prosperity. To understand this, we must see the car market as reflecting the country's own economic and social development in which millions of previously underprivileged people have been making enough money to become neophyte consumers, while smaller numbers of people have now had money enough to become more sophisticated, “tasteful” consumers. Market research seldom has a chance to follow people in this trajectory over time,²⁷ so that efforts to study consumer preferences can hardly help

²⁶ It is interesting how one falls into the trap of saying “solid Republican” (one never says “solid revolutionary”) when in fact the paradoxes of Republicanism today, whether “modern” or “ancient,” are as porous as any outdated yet fanatical ideology can possibly be.

²⁷ For some preliminary discussion, cf. David Riesman and Howard Roseborough, “Careers and Consumer Behavior,” in Lincoln Clark, ed., *Consumer Behavior*, Vol. II, New York University Press, 1955.

concentrating on the general growth of the market for large cars, and extrapolating from this growth, while neglecting those buyers, small in numbers but growing, who were beginning to find in things other than cars, and activities other than driving, their ties to self and society. It seems usual in history that decline in a culture or an area has set in before the peak of its visibility and power, and so it may be with the extravagant automobile in America.

Already one can see the effects of the auto manufacturers' provincial inability to learn from others who have had experience in industrializing fashion. Detroit, ignoring the rationale for cyclic variation and the role of minority tastemakers, persists in the assumption that model must follow model in a single-track, linear progression, with no imaginable replacement for a given style but more, *ad nauseam*, of the same. Confronted with a situation somewhat similar to that of the French dressmaking industry after World War II, with an excess of facilities and a threatened loss of leadership, it has been unable to bring forward anyone with the courage and inventiveness of the late Christian Dior, who launched an excessively long and full skirt in the fall of 1947, completely counter to the going trend, and thus gave work to the idle mills of Lyon and Saint-Etienne at the same time that he restored the lost initiative to Paris. The lesson should be clear by now that mass taste no less than class taste is subject to satiety, and that any business enterprise dependent on style must maintain a watchful and sympathetic espionage over the impulses of intellectuals and other deviants. It is often an unhappy side effect of market research, however, to confirm the manufacturer

in his "democratic" refusal to discriminate among his customers and thus deprive him of interpretive tools for coping with a drop in sales, so that among his few potential responses to the current sag is a Neanderthal fury against friend and foe alike.

We might raise the question, for example, why the automakers could not have protected themselves against this decline by riding at once the majority trend towards the gaudy and the minority trend against it, by seriously putting out two lines of cars. Why, for instance, could not the first Plymouth postwar station wagons, which found a market precisely because of their form-follows-function appeal, have been kept in production rather than turned into a sedan-cum-back-porch—much as many handsome Colonial and Georgian houses in this country were fitted with false fronts, big-pane windows, etc., to conform to the onrushing vulgarities of post-Civil War taste? One reason why not lies in the curious fact that even the minority's taste, willy-nilly, is influenced by the visual scene created by the majority: there are only a few whose vision of what a car should look like and feel like can hold out against the massive impact of forced obsolescence. In this, as in other aspects of life, we become corrupted by the seemingly inevitable, the given. At best, we transfer our desire for a visual aesthetic to other realms, consigning the auto to the featureless majority, and thinking it more important to have beauty in our book-jackets, our ties, our living rooms, our gardens.²⁸

²⁸ Actually, an increasing number of Americans satisfy both tendencies by a first car which is big, a second which is European or Rambler style. And the Volkswagen and

Indeed, one speaks too crudely in identifying majority and minority as persons, instead of tendencies within persons. We doubt if there are Volkswagen yearnings in the new-rich Southern ex-farmer working in a Louisiana oil refinery, or even in his children—any more than there are such yearnings in the oil-rich of Saudi Arabia. But we suspect that there are such yearnings in many whose "status personality" is adapted to the cars of the Big Three, so long as things in life go well with them and no criticisms of their taste reach them from sources they respect. At the first rumblings of depression, however, impulse buying of cars takes a sharp drop: the fact, previously repressed, that the old car is good enough—and even good enough for me—becomes more salient; and sputnik for some furnishes still another rearrangement of "needs" and socially influenced perceptions.

But if the "minority" taste within individuals is repressed, that within the auto industry itself appears to be even more repressed. The provincialism of Detroit, referred to above, can hardly be overestimated—this, despite the managerial sophistication brought to GM by Alfred Sloan and to Ford by the grandchildren of Old Henry and their GM-trained associates. We doubt, for example, if it occurred to any high-level people in the Ford Motor Company or their rivals elsewhere that it was a tragic social waste—if a company

other European car-makers quite consciously cultivate this second-car market, which allows the owner to have the status as well as the roadability of two worlds. (One of us was recently met at a convention by an educator in a brand new Mercury of the gaudiest sort, and then told "If I'd known what you were like, I'd have brought our Renault.")

AUTOS IN AMERICA

imperative—to spend a quarter billion just to add one more boxy and epicene car to the country's range of models. (In some market research interviews concerning the Edsel, before its release, respondents did ask why there was need for a new car, but they readily accepted the explanation that Ford needed a car in the medium-price range.) Philanthropic as the Ford family is, in its Sunday best, its weekday considerations would hardly have included the question as to whether the country might not have better uses for the money and skill and energy that went into the Edsel. (Again, the analogy with national politics is striking: post-sputnik, few ask whether there are alternative uses of American energy to a mad missile race with the Russians.)

To make two sets of cars at once—one to appeal to the majority, and the other, to hold open the door of the future for a minority—would of course require an ability, rare in American life at any level, to operate with conviction and enthusiasm at two levels simultaneously. Can one imagine the Chrysler ads simultaneously flaunting “The Forward Look” and the nostalgic look? Or GM’s TV personalities pushing the Chevrolet and the Opel in alternate commercials? The very sincerity of American businessmen and professional people, which makes it necessary for us to believe wholeheartedly in what we are doing (and gives a good conscience to many life insurance salesmen and a bad one to a few vocal admen), also makes it nearly impossible for us to throw ourselves in our corporate capacities in two directions at once. Americans want unconditional surrender whether they fight a war or seek a market; and lack, for the most part, the flexibility to

conduct limited warfare for limited aims.

Thus, we come back to what we have emphasized above, namely the desire to build into every car an inescapable appeal to every whim within the Great American Market, and into the advertising and sales pitches a rationalization to hold down repressed ambivalences. Chrysler could not rest secure, as a stock-owned company, with a shrinking share of the market prior to 1955, along with a hope that trends would change: they had seen Henry Ford try this by main force in the '20s and lose out to General Motors.²⁹ Nor could they, as we have just argued, subdivide and compete with themselves, taking the risk of diminishing the market share of each car in the Chrysler line without attracting the attention and taste leadership that might result from a total commitment to novelty. Such innovations have to be insulated by being located in Europe (it is rumored that Chrysler is now also considering importing a foreign car as a hedge against itself), just as only from countries outside the United States have forcible incentives come to compete with the interservice rivalry and its consequences for uniform postures of frenzied armament.³⁰

²⁹ Perhaps the industry has also drawn premature conclusions from the failure of the revived Lincoln Continental. In the text above, we suggested that this car might be too expensive for the highbrow, too highbrow for the new rich. We should have added that any car costing \$10,000 is vulgar and conspicuous *per se*, irrespective of ascetic styling, and therefore could not even appeal greatly to the old rich.

³⁰ The Navy, lacking a big stake in strategic bombing and missiles, was once the Chrysler of the Armed Three, backing sobriety and even diplomacy; more recently, it has conceded to the nuclear doctrine of

DAVID RIESMAN AND ERIC LARRABEE

In drawing these gloomy parallels between Detroit and the Pentagon, we are seeking to emphasize the built-in instabilities of competition among oligopolies. Having taken out after GM, there is no easy road back for Chrysler to its one-time devoted clientele. The Edsel is, in the same system, a plea for brand loyalty to Ford: stay with us, even if you rise above us. GM is much too big to follow anybody or to experiment with wide extremes: within the

SAC in return for being allowed to build big carriers, thus maintaining the principle of "competition" at the expense of any strategic alternative to self-destruction.

industry it can neither lead nor follow, even while defining the popular taste by its own majority vote. How hard it is to imagine another way of marketing autos, having them, for instance, sold only on order, for cash, after the buyer had had a chance to wait until his own tastes caught up with his impulses! With a whole economy geared to the auto, what else would we spend our surplus productivity on, our surplus energy, were the car suddenly taken away as a central prop? We are no more ready for such a shift than for sudden disarmament.

A REVIEW OF RECENT RESEARCH ON CONSUMER BEHAVIOR¹

James Morgan

INTRODUCTION

Anyone with the temerity to attempt a review article in a social science field must make arbitrary compromises between careful, thorough, critical analysis of a narrowly defined area, at one extreme, and an extensive annotated bibliography at the other. Our compromise will prove to be closer to the annotated bibliography, for the following reasons: Unlike psychologists, the economists have no tradition of careful abstracting and bibliographical work. Even such volumes as the two entitled *Survey of Contemporary Economics* tend to be highly selective, and to use material from a few main sources. The chapter by Ruth Mack in Volume II of

the *Survey* entitled "Economics of Consumption" makes use primarily of about a dozen economic journals, some publications of the federal government and of the National Bureau of Economic Research, and books by economists. This is made possible by restricting the review chiefly to studies of the dynamics of aggregate consumer spending and saving in the United States or Great Britain.

The result of this tradition is that anything out of the main stream of economic sources is generally overlooked, with the possible exception of the main journals in sociology and psychology. Furthermore, research studies even if they are in these journals or in government documents tend to drop from

¹ The author wishes to express his indebtedness to numerous colleagues who read drafts of this review and made suggestions for improvement, in particular Eberhard Fels, John Atkinson, Charles Cannell, John Lansing, George Katona.

The compilation of the bibliography was greatly aided by Ivan Johnson and Petra Pirrung, Librarians at the Center for Advanced Study in the Behavioral Sciences, and Barbara Anderson, Research Assistant at the Center. Above all, the time necessary for this task was made available through the fact that the author was a fellow at the Center for Advanced Study in the Behavioral Sciences during 1955-1956, for which he is deeply grateful.

Thanks are also due the Foundation for Research on Human Behavior for allowing use of its mailing list in the search for studies that would otherwise have been missed.

sight in a few years. For instance, the excellent study by Monroe et al. on the life cycle's effects, published in 1942, was almost completely ignored. Consequently, the author felt some compulsion toward inclusion even of references to works of rather narrow compass or uncertain quality.

A second reason for inclusiveness is that we are interested in empirical research in a field where basic data are inadequate, and good research really just beginning. Hence, even little bits of information or insight can still be useful, if only in formulating hypotheses to be tested properly later.

There is, therefore, a rather long bibliography appended to this article, containing many references about which we shall say nothing, and even some that contain no annotation in the bibliography. Even at that, the bibliography is restricted to *recent empirical* studies on *consumer behavior* and may well have missed some of these. By "recent" we mean for the most part since World War II. Very little good research work was done before then, particularly in the consumer field, and most of the statistical work with aggregate or market data has been redone by others with improved methods and revised data. By "empirical" we mean studies that contain at least some observational or factual information about consumer attitudes, expressed preferences, or behavior in the use of their time and money. Some of these data come from the records of banks or companies, some from surveys, some from laboratory experiments, some from case studies, and some from observation on a systematic basis. Purely theoretical articles, purely methodological articles, and purely programmatic articles containing no results

or data on consumer behavior or attitudes are excluded, though one could argue that studies of who answers mail questionnaires are properly studies of consumer behavior, and conversely that a purely speculative article by a man with insight might be more useful than a small, carelessly done field survey. Theory and methodology are extremely important, but a line had to be drawn somewhere.

Finally, "consumer behavior" includes behavior in the use of money, and perhaps in the choice between leisure and money, but excludes studies of worker morale and motivation, of labor mobility, and of managerial motivation. It also excludes studies of how consumers *ought* to behave, whether based on mathematical models of optimization or on home economists' ideals about the informed, creative, consumer shopping or planning for the future. We do include references to review articles and a few major writings in closely allied areas such as laboratory research on learning, perception, motivation, conflict resolution, reference groups, pressures to conformity, measurement of utility-subjective-probability-joy-of-gambling, etc. And we take a passing glance at the rapidly developing field of social anthropology and studies of economic behavior in different cultures. The main bulk of the references are statistical demand studies, or surveys collecting data on consumer expenditures or preferences. Another group of studies involves detailed expenditure data on restricted or nonrepresentative samples of people.

The author makes no pretense of having read all the items in the bibliography, or even of having seen all of them. Items from other lists and bibli-

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ographies have been ruthlessly cribbed. On the other hand, a number of studies, some of which will be mentioned in the subsequent discussion, do not appear in the bibliography, because they are not generally available even for inspection. This is true of a great mass of so-called "market research" where some of the findings are felt to be trade secrets. The reader will find only a cursory summary of the work in the field of brand preference or advertising effectiveness, etc., because so little of it is available.

Very little evaluation is attempted of the methodology used in the studies listed. This is chiefly because in most cases the published reports do not provide enough information to allow any adequate evaluation. It is also because one evaluates a study intended as a source of fruitful hypotheses or insights differently from the way one evaluates attempts to test hypotheses or show that significant relationships probably exist in some specified population. Samples of all degrees of adequacy are referred to in published reports as "representative," and it is often only by chance that one spots substantial sources of bias in samples, e.g., as when a random sample of blocks is taken, but exactly five interviews are taken in each block, so that the more houses in a block the smaller the chance of any one of them being selected, or when "substitutions" are allowed. Assessment of methodology in interviewing or processing of data is even more difficult. When the details are available, one may know what questions were asked, but one never knows for sure how they were asked, and how the replies were quantified. Hence, in the written part of this review, we shall first establish a frame-

work into which various types of research fall into place, and then concentrate on the discussion of some of the more important pieces of research as we see it.

HOW DOES RESEARCH FIT INTO A GENERAL PATTERN?

Research on consumer behavior can be done at various levels, and it is essential to get some perspective before we discuss specific research. We can find ourselves on a number of continua:

1. THE LEVEL OF AGGREGATION

One can work with the individual making a specific decision about a particular object or expenditure, and attempt to explain his behavior as well as one can, like a clinical psychologist or psychiatrist. One can go to the other extreme and deal with the total spending over many commodities and services, of all the people in a country (or the world). And of course there are many combinations in between, dealing with categories of commodities or groups of people.

2. STATIC VERSUS DYNAMIC EXPLANATION

We may want to explain behavior at a point in time or over a period on the basis of all the conditions at the time and the history up to that time, or we may (as most economists do) want to explain why patterns of behavior change, and in response to what other variables. Economists may be interested in long-run changes over many years, or more rapid changes over a period of months or a few years, but they are concerned with *change*.

**3. DEGREE OF SIMPLICITY OR
SUPERFICIALITY**

Since the purpose of explanation is prediction, we may prefer to explain behavior at a fairly immediate level, relating it to reported attitudes, plans, perceived roles, or images of self or others or of products. On the other hand, we may want to interpret these attitudes as themselves the result of some more basic combination of motives, incentives, and perceptions (cognitive structures) as in the theory of personality, though these are not as easy to measure. We might even want to trace behavior back to unconscious Freudian impulses. Social psychologists generally feel that it is not useful to go back very far either in time or along the chain of causation, if one really wants to understand and predict present behavior. It seems clear, however, that the nature of the problem will partly determine what level of analysis is best.

**4. SALIENT DECISION OR HABITUAL
ACTS**

The kind of decision and behavior we want to understand and predict also makes a difference. Some decisions are not very important or salient to the individual, and he may rely on patterns of behavior that have proved satisfactory in similar situations in the past, without much if any conscious deliberation, problem solving, or (in psychological terms) cognitive reorganization. This seems particularly likely if the decision is a frequently repeated one of the type that is important to the market researcher, e.g., choice of brand of toothpaste or soap. At the other end of the scale are important, infrequently made decisions involving large sums of

money or commitments as to future patterns of living, e.g., moving or purchase of a car or house. Here reliance of analogous past experiences is less likely—there is less relevant experience—and genuine problem solving at a conscious level may well be involved. Research on such decisions may well require a different approach and different instruments.

**5. METHOD OF MAKING INFERENCES
ABOUT MOTIVATION**

The factors that affect behavior may be more or less easy to ascertain. Some the person may be aware of and perfectly willing to tell about. Others he may realize but be unwilling to admit to anyone, and still others he may not himself be conscious of. Some of these second and third types we may get at by observing his overt behavior, but we are more likely to rely on correlations in a sample between economic and demographic and attitudinal variables on the one hand and behavior on the other. Even if we rely on expressed attitudes, preferences, and reasons it seems preferable, at least in the field of consumer behavior, to relate them to some actual behavior or change in pattern of behavior. The ideal situation is one where behavior is correlated simultaneously with a number of variables in a multivariate analysis, some of these variables factual, some verbal expressions of attitudes, perceptions, or reasons for action, and some measures of covert subconscious factors. This of course requires quantification of all the explanatory factors and the use of groups rather than individual subjects, preferably representative samples of some population.

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6. ECONOMICS AND PSYCHOLOGY FIND COMMON GROUND

A great deal of the failure of economists to interest psychologists in problems of consumer behavior has, it seems to the author, resulted from the tendency of economists to start at the aggregate, overt, dynamic level, and to want to explain changes in behavior with respect to changes in a limited number of other variables, rather than differences in individual behavior or even all changes in behavior. It is the *marginal* propensity to consume with respect to *changes* in income or the *elasticity* of demand with respect to *changes* in price that usually concern the economist.

There are various branches of psychology, and any classification would be an oversimplification, but it seems fair to say that most psychological research has either concentrated on individual clinical explanation, usually without quantification, or has taken attitudes rather than behavior as the dependent variable, or has concentrated on explaining behavior rather than changes in behavior, or has restricted itself to extremely simple situations of the rat-learning type with a limited number of simple motives such as hunger or thirst and an interest in the process of learning rather than the assessment of motives.

Knowing that it is difficult to discover the causes of behavior from verbally expressed attitudes or explanations of the subjects, psychologists have tried to keep situations simple enough so that by varying one thing at a time, or by experimental design, inferences could be drawn about causes. Many of the hypotheses of the economists have seemed

naïve, and their problems much too complex to be studied until broken down into components for which testable hypotheses might be derived. With the development of laboratory and sample interview techniques, and with the emphasis of social psychology on prediction of behavior on the basis of the immediate situation, using variables like attitudes, status roles, and perceptions of the situation, it has become possible to study problems of more interest to the economist.

Hence, there are social psychologists and some clinical psychologists now interested in quantifying variables, and developing generalizations that will help predict the behavior of people, not just of an individual. And there is a growing awareness that consumer behavior and voter behavior are fruitful fields because the dependent variable is observable and specific.

Economists, on the other hand, have been more willing than in the past to admit that such attitudes as optimism-pessimism or expectations about the future and other "psychological variables" might be important in the decisions of consumers and businessmen. In aggregate analysis this takes the form of increased emphasis on separate treatment of subgroups who can be expected to behave differently, e.g., farmers, unincorporated businessmen, and other consumers. In the analysis of the household or firm there is an uneasy realization that people do more than just maximize money profits, and that tastes change, but no more realistic theories seem to be available yet that seem generally applicable.

The economist may be concerned in some cases with detailed consumer choices, such as purchase of a car, but

for the most part he is interested in changes in choice patterns over time by large groups of people who may all be affected by the same events. He is interested in patterns involving major types of choices such as allocating of income to saving, investing in durables, or spending for current consumption. At this level, some light can be thrown on motivation of people by looking at how aggregate spending changes with response to changes in incomes, price levels, new household formation, etc. Or one can look at sociological variables such as differences between cultures, or between major subgroups in a single culture. Only variables that show some presumption of resisting the washing-out process of aggregation, i.e., that affects large masses of people in the same direction, are likely to receive a hearing in the theoretical constructions of economists e.g., expectations about the course of prices, or expected future incomes, or general waves of optimism.

But all this does not mean that the economists and psychologists are working at the same kind of research, nor that they speak the same language. There remain basic differences as to the level of aggregation at which research is conducted: individuals and specific decisions versus groups and classes of decisions. The economist is primarily interested in changes over time in the behavior of groups with respect to changes that affect many people at the same time and in the same way. The psychologists who have been interested in change have been concerned with extremely simple forms of behavior such as a rat learning a T maze, or in explaining and changing the behavior of individuals as clinicians do. The psychologists interested in generalizations

about behavior in realistic social situations have either taken attitude as the dependent variable, or have been more concerned with behavior than with changes in behavior.

The economist is likely to argue that in dealing with changes in behavior averaged over groups of people one washes out many personality factors and individual differences and thereby simplifies the problem of research. The psychologist is likely to argue that in dealing with whole classes of decisions—lumping together as saving such things as debt repayment, accumulation of assets, and the purchase of a house—one makes an already complex problem of motivation impossibly difficult to unravel.

It seems clear that economists will have to submit to some fragmentation of their problems into components, and psychologists will have to face the problem of whether concentrating on analysis of changes in behavior over time can simplify some problems of research and allow the omission of some variables that do change over time.

The comments that follow are intended primarily for economists, and attempt to use terms that convey the correct meaning to them rather than those that seem technically precise to the psychologist.

A DIAGRAM OF THE DECISION-MAKING PROCESS AND ITS RELATION TO THEORIES AND TO AREAS OF ONGOING RESEARCH

One way to see what is meant by saying that economists and psychologists have been working at different levels and with a different approach is to look at a diagram that attempts to

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incorporate most of the variables and constructs which one would use in explaining economic choices of an individual. The reader will notice that this chart is (1) atomistic, explaining the behavior of one individual making a single choice between narrowly defined alternatives, and (2) only partly dynamic in the economist's sense, in that consequences of previous decisions affect attitudes and are applied in making current decisions, but the effects of changes in the situation are not explicitly handled.

It is instructive to examine the diagram, both to see how psychological research on motivation, personality, learning, etc. fits, and to see what might happen if we asked only what determined *changes* in the patterns of choices, and then aggregated over classes of choices and over groups of people. How many of the variables would still be important?

The diagram pictures an individual choosing between alternative ways of using his money. At the most immediate level he may have specific plans, but other attitudes may also affect what he actually does, including some that tended to shape his plans. As economists we may prefer to describe these attitudes as "expected relative utilities of alternatives," even though for practical prediction purposes we may get at them through a series of queries on attitudes and plans.

The actual choices will, of course, also be constrained by the reality of the situation and by numerous institutional rules and regulations, and by commitments resulting from previous choices. And in addition the way in which decisions are made—the degree of insight, problem solving, and information get-

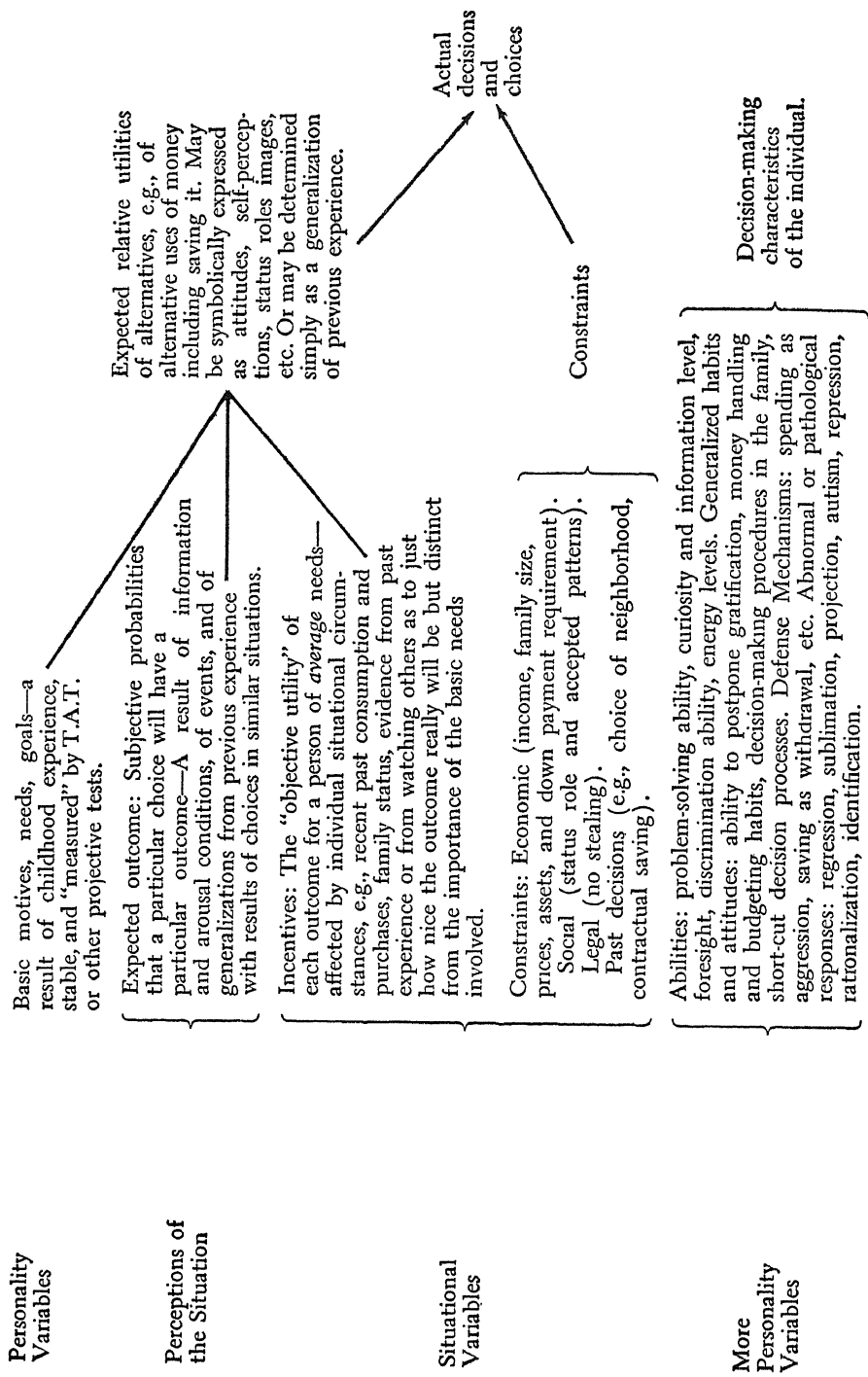
ting, the ability of the individual to look ahead, the way decisions are made in the family, and perhaps the presence of certain maladaptive behavior patterns or defense mechanisms—will also affect the results. The constraints can enter any analysis as additional explanatory variables, but the decision-making peculiarities of individuals are not as easy to handle. We can of course hope that these things may average out as soon as we go from individuals to average behavior of groups, but it is easy to think of types of choices where they may not. It is also likely that these things do not change over time in a systematic way for substantial numbers of people.

There seems no point in trying to go behind the constraints to explain why they exist. As for the decision-making characteristics, even if they remain important it would be difficult to explain how they came to be. The "expected relative utilities," however, can stand some further scrutiny, since it is here where motivation is involved, and changes most likely.

The expected utility of any particular choice can be thought of as a resultant of the relevance of its outcome for various needs or goals of the individual. For each need, there is a component of expected utility that depends on three things: the strength of the need, the perceived probability that the outcome of that choice will be such as to contribute to the satisfaction of that need, and a measure of the importance of that contribution.

The strength of a basic need is assumed to be a personality factor that does not change much if at all over time. It can be assessed empirically by such projective devices as Thematic Ap-

A DIAGRAM OF FACTORS AFFECTING A CONSUMER'S CHOICE



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perception Tests (Atkinson, McClelland).

The individual's belief that a choice may help satisfy a certain need is essentially a probability notion, but it applies even to nongambling situations, since in real life we are almost always unsure about the actual outcome of many of our choices. It is possible that perceptions of these probabilities are also affected by such personality factors as the need for achievement, as well as by past experience.

The incentive value of a particular outcome of a choice is separated from the strength of the need because the former can change from one situation to another, or vary with the condition of the individual. A new car may satisfy a need for a status, but its value in so doing depends on whether the individual already has a car that is fairly new and suitable. Having some money in the bank and getting a secure civil service job may both contribute to security, but in different degrees.

Needless to say, when choices involve a multiplicity of goals as most important choices do, each with these three aspects, and when it is necessary to consider the same analysis for each alternative choice, the analysis becomes complex. It is possible, however, to design laboratory experiments that simplify things. It is also likely that in a number of important real-life decisions we can pick out the most important aspects and analyze them.

Even though we want to explain only *changes* in behavior, the things that do not change, e.g., the motive strengths, must still be considered. The final result of changed perceptions of probable outcomes or changed incentive strengths may well depend on the pattern of mo-

tives with which they interact. It is true, however, that we can concentrate on the things that change most, that is, the situation and the individual's perceptions of it. Any predictions of changes in behavior, however, must have some built-in assumptions about what happens to the other variables of the diagram, and about how the whole pattern interacts.

It may be useful to indicate briefly how certain theories of behavior fit into the diagram:

1. REFERENCE GROUP THEORIES

A common theoretical position among sociologists, economists, and some social psychologists is that much behavior is influenced by the "reference group" to which the individual belongs. On the diagram this could be interpreted as a high need for either status or affiliation, and an expectation that certain kinds of activity or choices will increase one's status with certain groups, or one's belongingness. Whether it is possible to specify in advance the groups relevant to people, or the types of choices that will be seen as giving status or membership in these groups, is difficult to say, particularly since it is so difficult to avoid circularity, i.e. determining the relevant groups from the behavior. More recently there has been a tendency to talk of status role rather than reference groups, avoiding the necessity for specifying some actual group of people. In any case prediction of individual behavior requires predicting first which groups or status roles will be seen as relevant and important, and second what sort of actions will be seen as increasing status or affiliation or as satisfying the requirements of that group or role.

In addition, if it is *changes* in patterns of behavior that are to be explained or predicted, it may become necessary to explain how people *change* roles or reference groups, and what might change their perceptions as to the kinds of behavior suitable to one's role or approved by one's reference groups. We can be misled as to the importance of reference groups if we neglect this static-dynamic distinction. Perceived roles may explain a great part of the differences in behavior in a cross-section sample, but explain very little of their changes in behavior over time. It may be that changes take place as much by shifting of individuals to different groups or roles as by changes in group norms or the way groups accept new ideas.

2. HABITS, STANDARDS OF LIVING, AND RESISTANCE TO CHANGE

Among economists a common theoretical proposition is that consumption habits and standards adopted at a previous higher level of income will not be given up readily if income falls, i.e., that changed behavior is more likely in response to increased income than to decreased income. This presumes, in terms of the diagram, a need for status.

There is also a whole class of situations, many of them less salient and important to the individual where patterns of behavior persist even when the situation changes somewhat, as though there were no genuine decision-making but rather a reliance on habit. Some persons looking at such behavior like to think of habits, traits, and behavior patterns as independent variables in their own right, particularly for short-run static explanations of behavior. It would seem more useful to interpret these situ-

ations as those where incentive strengths are low and expectations as to outcomes of choices are determined from previous similar experience without much new consideration of the matter. Rather than add more variables to the diagram, we might interpret this distinction into the existing structure.

At any rate, we know there is "impulse buying" where simple availability and the immediate cues of the situation plus habit seem to determine choices. We also know that in other more important decisions, where there is less experience to go on, consumers will go through a much more intensive process of information-getting and decision-making. Certainly from the point of view of one interested in empirical research and predicting of behavior, it does make a difference whether generalized previous experience is involved, and is translated into simple rules of action or of decision-making, or whether the incentives are strong enough and the expectancies such that the decision is a salient one with some substantial mental energy put into making it, i.e., the person "attends to it." In very important choices expressed attitudes may not be enough, and prediction of behavior may require an analysis of motives, incentives, and expected outcomes.

3. SOCIAL AND ECONOMIC MOBILITY

Sociologists tend to explain behavior not only in terms of status roles, but also in terms of upward social mobility and the tensions thus engendered (particularly by failure to move). We have already mentioned that reference groups, whether status groups or not, can be thought of in motivational terms as representing an example of a need for

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status or affiliation. When it comes to mobility, however, another motive, the need for achievement, may be dominant, and one can either analyze behavior in terms of social mobility or, somewhat more basically, in terms of upward mobility, social or economic, as an expression of a type of achievement motivation. Related to achievement is the problem of "aspiration levels." Economists have been used to the idea of diminishing marginal utility, whereas psychologists, though aware of satiation with specific foods or pleasant stimuli, have been more interested in the way in which success or failure affected motivation and behavior. Achievement in some lines, far from bringing satiation, seemed to raise the individual's aspirations. This does not need to be interpreted as a change in the relative strengths of basic needs; rather, it indicates the existence of a need for achievement. As one becomes good at something, only continued improvement can bring the same sense of satisfaction. In this case the expectation as to the outcome of some behavioral choice and the incentive of that outcome are not independent—a low chance for successful outcome *raises* the incentive value of that outcome. Alternatively as past success increases the probability of success on the next try, the incentive value of such success becomes smaller. This would explain why a businessman might prefer a risky investment *even if it had a lower expected value*, because a successful outcome would represent more of an achievement. Experiments by Atkinson and others have already indicated that persons with a high need for achievement tend to work harder on tasks with low probabilities of success—harder than

persons with lower achievement needs, and harder than on tasks with a greater chance of success attached.

4. CLINICAL PSYCHOLOGY AND PSYCHOANALYSIS

A number of psychoanalytic ideas are potentially important in explaining consumer behavior. How important they are will again depend on what particular type of behavior one is investigating. Some of these factors represent abnormal reactions that may be statistically infrequent, and unrelated to the actual choice situation. Even if frequent, they may be rigid and unchanging so that the economist could neglect them. They may, however, be important in particular types of choice and are left in the diagram.

Other clinical ideas can be thought of as lying behind and shaping the personality factors, the needs of the individuals. Whether one tries to measure the need, or something more basic lying behind it, or the more immediate attitudes that result from it, will depend on the problem to be solved. One can argue that "retentiveness" translates itself into a high "need for security" that will affect a person's attitudes toward various places where he might invest his money. To predict his investment behavior we might measure the attitudes, the need for security, and the expectations and incentives attached to the alternatives, or use a report on early toilet training. Which is more fruitful is a matter for investigation.

5. IRRATIONAL BEHAVIOR

As economists we frequently refer to "irrational behavior," by which we usually mean behavior that does not maximize utility or whatever it is we

think consumers should be maximizing. This does not mean that such behavior cannot be explained and predicted. Even if it is persistently maladaptive behavior, or persistently erratic, it may be explainable. Indeed, on closer examination it becomes difficult to define "irrational."

There are, however, also types of behavior that are not only capable of being explained and predicted, but are also adaptive and sensible once we understand what the consumer is trying to do and how he perceives the situation. He may be following imperfect rules in order to avoid the necessity for making a lot of decisions, as when he always orders the same dessert rather than think about it. More important, he may be aware of his own foibles sufficiently to attempt to outwit himself by constraining his own future choices. One might call such behavior rational at a higher level of rationality. It is rational, i.e., maximizing, from a long-range point of view, given the capabilities and abilities of the individual. A man who knows that his casual day-to-day decisions usually lack foresight and get him into difficulties may buy his car on credit to be sure that he will pay for it "out of current income," leaving his savings intact in the bank. The credit costs him money, but the compulsory saving feature constrains his behavior into a better over-all pattern than he would otherwise attain. It is likewise "higher rationality" for the same man to be lending money to his life insurance company (roughly measured by the cash value of his policy) at 2½ percent interest, because this, too, forces him to provide better for the future. Some of these major decisions seem to be based on rules of decision-making;

others operate by putting constraints on subsequent decisions, and both these are in the diagram. However, some apparently irrational decisions are the result of incomplete information or imperfect insight as to the facts or their interrelations, and the consequences of actions. Indeed, it is possible to explain some of the pressures toward conformity with group attitudes and behavior as resulting from ignorance and uncertainty and the use of the group as a standard against which to measure oneself.²

6. THE FAMILY AS THE PRIMARY REFERENCE GROUP

There have been some studies of decision-making and money-handling in the family. These attack the problem of aggregation at the first stage and perhaps an important one. They can also be looked on as an example of a primary reference group effect, where the decisions of the group might be stabler and easier to predict than if one looked only at individuals. Finally, they can be looked on as methodological studies to decide who in the family should be interviewed about family decisions, or whether the individual, the spending unit, or the family should be the unit of investigation.

7. PERCEPTION

Theories of perception and experimental work have mostly been on a much simpler level than any directly relevant to the analysis of consumer behavior. However, some of the research may well be relevant to explaining how past experience (and attitudes)

² See Leon Festinger's chapter in the 1954 *Nebraska Symposium on Motivation*, Lincoln: University of Nebraska Press, 1954.

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can affect the selection or interpretation of information in forming expectancies about the potential results of alternative choices in the future or in providing clues as to the incentive value of some purchase.

The importance of perceptions, particularly the way in which they interpret reality for the individual, is greater than would appear from the diagram. Economists, used to dealing with factual data, have generally not faced the difficulties arising from the fact that different persons, or a person at different times, may see similar facts in different ways, or may fail to see some facts altogether.

8. LEARNING

Theories of learning have for the most part been concerned with learning in rather simple situations, as when a rat must learn which of two paths to take in a maze or a person learns a simple discrimination. However, when we are concerned with *changes* in behavior over time, then problems of learning become even more important than they are in the usual theory of personality. By definition, basic motives or needs are stable facets of personality "learned" during one's early years. It may well be important to find out, as McClelland has been doing, what sorts of environment and training lead to developing individuals with high versus low need for achievement. For instance, if early independence training in children leads to strong achievement motivation, changes in educational or child-rearing patterns in groups or in a country may lead to important changes a generation later in economic behavior.

Expectancies, i.e., perceptions of paths to goods, are subject to change

on the basis of experience—a kind of learning process about which little is known except in very simple experimental situations. Experience with the results of past actions and choices allows the individual a much better idea of just how good certain outcomes will really be for him, thereby changing incentive values. At a simpler level, there may be a connection between the tendency of rats to "experiment" even after they have learned which lever brings the food, and the tendency of customers to shift brands so frequently!

In complex situations, one learns not just simple facts or relations, but complex things. What little evidence we have indicates that even where people know the facts, they frequently do not understand their relationships. These problems of cognition need more attention and study.

9. PERSONALITY

Psychologists will recognize that much of the diagram is borrowed from personality theory and research. The concepts of need or motive strength, expected outcome, and incentive value, and the idea that the three together tend to affect behavior, come from here (McClelland, Atkinson, Rotter, *Nebraska Symposiums*). This body of theory and experimental work seems to have much potential relevance for research on consumer and business behavior. Expected outcomes are a sort of subjective probability that a certain decision or action will actually lead to a desired result. They are probably subject to change through experience, communication from others, advertising, or new insights.

The idea of incentive value is appealing to the economist, since in many

situations proxy values such as the value of a man's car relative to the average for his social class can be found and used in research. Furthermore, the use of such variables is common in economic research, while the other variables in the diagram are mostly ignored.

Incentive value is akin to the economist's normative idea of the "real objective value" of the object or result to any person in that situation. Finally, these three—the motivational dispositions, the probabilistic expectancies, and the incentive values—together produce something akin to the economist's idea of the expected utility of the object or outcome, which is compared with that of other alternatives in arriving at decisions.

Abstracting for a moment from any uncertainty, as economists frequently do, the usual notion of marginal utility in economics is then seen as a mixture of the individual's basic needs and the relation of the outcome (or object of purchase) to the individual's situation (i.e., the condition of his old car).

It should be said here that psychologists as well as economists use words in different ways, and it would be difficult to get agreement on *any* theoretical formulation. The basic distinctions we have been making, however, are made by many psychologists, even though in some experimental situations things that are held constant may be lumped into a single category or ignored. In dealing with hungry rats, differences in personality with respect to physical satisfactions such as eating are ignored and assumed to average out. In many learning experiments, the reward or incentive (food pellets) is kept constant, so satiation effects on incentive values can be ignored. For the economist, the most

interesting distinction in personality theory is the interpretation of utility as a complex result depending on basic motives (personality variables) and incentive values (situational variables). The emphasis on the third facet, the uncertainty as to the actual outcome of many consumer choices, should also prove fruitful, however.

10. ATTITUDES AND ATTITUDE CHANGES

Social psychology tends to concentrate on attitudes, as being more directly useful in the prediction of behavior. Until recently, however, much of the research dealt with interrelationships of attitudes, or the factors that explained attitudes or changes in attitudes taken as dependent variables. Recently, however, studies of both political and economic behavior using attitudes as explanatory variables have been made. As we have already said, one fruitful way of explaining and predicting behavior is to relate actual behavior of individuals in a sample to both their attitudes and to the economic-demographic-factual situation that shapes and constrains their decisions. We discuss this further in Part 10 of the next section.

11. SUMMARY

There is always danger of being totalitarian in one's theoretical orientation, and of attempting to subsume all empirical work under one simple theoretical rubric. There is an additional temptation to concentrate on research areas one considers important or interesting. The author has been attempting to interpret a number of theories and areas of research by relating them to a single diagram, plus some levels of analysis not in the diagram: the level

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of aggregation, and the concentration on change in behavior rather than behavior.

For much practical research, we shall be forced to deal with the relation of attitudes and opinions to action. We need, however, to find out more about what causes attitudes to change, and how needs, incentives, and expected outcomes affect attitudes and behavior. As we shall see later, research is already going on at Michigan's Survey Research Center on what causes attitudes of consumers to change, as well as on the relation of attitudes to behavior.

A number of psychologists are doing important research on the way in which personality structure, incentives, and expected outcomes interact and affect performance in a laboratory situation.

The important thing about all this research is that it avoids the circularity familiar to economists—as when every act is interpreted as maximizing utility—by developing independent measures of the variables in the theory.

In terms of behavior models, one might say that certain variables have been taken out of the random error term and put into the equations. This merely recognizes the fact that some psychological variables are not random and cannot therefore be ignored, but unless we do more than this we have only added to the number of exogenous variables. Ultimately, it may be desired to be able to predict these variables within the system. In the meantime, it often may be possible to rely on their relatively slow changes over time and “predict” them on the basis of measures from sample surveys a few months earlier. Since these measures, if they are not to be inferred from behavior in the old circular manner, must be de-

rived from responses individuals make under specified standard conditions to questions or other stimuli, many methodological problems arise as to whether the stimuli of assessment devices and questions really elicit symbolically the same incentives and expected outcomes as the real-life decision situation would. There is good evidence that simple questions asking respondents what they would do if ——— bear little relation to what they actually would do (Baker, Berry). There is doubt as to the interpretation of expressed preferences and the reasons given verbally for them, though the reasons may be useful if carefully interpreted and translated.

There is also a problem whether expressed attitudes, opinions, and plans are really representative of the individual's feeling. The individual may repress from expression and even from his conscious awareness certain feelings of insecurity, or socially unacceptable ambitions or attitudes. It is for this reason that direct questions on feelings of economic security or on who handles the family money may give deceptive results. On the other hand, projective techniques must also be validated in order to be sure they are measuring what we intend to measure.

Most of the studies in the bibliography, and most of the studies we shall discuss in this article, are only remotely related to the variables of the chart, being aggregated over large groups of individuals, and over classes of decisions (sometimes decisions unlikely to be motivated in the same way). They rely in most cases on very indirect inferences as to motivation, or on expressed reasons. For example, one may notice that farmers have a different income-saving relation from ordinary nonentrepreneurial

consumers, and infer either that they have different motives for saving, or that much of their saving is involuntary, being forced investment in equipment or inventories, or farm losses (dissaving). Or one may discover that individuals never had certain information, and hence could not have been motivated by factors revealed by the information. Or one might discover that they did not understand the relevance of what they did know. In some situations the inference is from a variety of facts and attitudes combined, as when one notes that in buying houses, only one or two were even considered, and infer from this that the neighborhood and price range specifications were so limiting that no real choice of architecture, layout, etc., was even available.

AREAS OF ACTUAL CURRENT RESEARCH ON CONSUMERS

With this somewhat overlong introduction, we turn now to discuss some of the research that has been carried on recently or is currently being carried on. In an attempt to make things more orderly than they really are, we categorize the research into ten major types, partly on the basis of level of aggregation, partly on the basis of fairly distinct groups of researchers working with different theories or different methods.

1. "CONSUMPTION FUNCTION" STUDIES

Studies of the "consumption function" based on aggregate data from national accounting records, have been a major preoccupation with economists particularly since the great depression and the concern with Keynesian economic analysis and fiscal policy. Ferber

has reviewed some of these (Ferber). They have had primarily a statistical rather than a motivational orientation so much so that only recently have economists noticed that the data they were using combined the saving of farmers, unincorporated businesses, and trust funds and institutions with the saving of ordinary consumers, and that consumers' investments in houses were treated as saving, but their investments in durable goods and cars were treated as consumption.

With growing awareness of the necessity for a "structural equation" approach, the most recent attempts have been to estimate the parameters of a system of equations representing the economic system and disaggregating as far as the data allow. It is still difficult, however, to build into these systems anything but the simplest assumptions about consumer motivation, and even more difficult to test the assumptions with the model, since the alternatives are not clearly specified.

Another refinement has been the joint use of cross-section and time series data, though here again the primary emphasis was refined estimates of the magnitude of the effects of income and changes in income on total savings or spending (Tobin, Staehle, Lippitt).

A detailed review of all this literature is beyond the scope of this article, and in any case it has been in the limelight in recent years so that most economists are familiar with it. Recent arguments as to whether structural-equation maximum-likelihood estimates are really superior to ordinary least squares estimates—which give somewhat similar answers—are matters of statistics rather than of consumer behavior.

In his book, *A Theory of the Con-*

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sumption Function, Milton Friedman attempts to show that consumption (excluding "transitory consumption") depends on the "permanent" income level, i.e., that temporary changes in income do not change "regular" consumption expenditures (Friedman). He uses a wide variety of data in an attempt to show that this theory accounts for the data better than theories that relate saving to absolute levels of real income, or to the economic position and behavior of one's reference groups, as though all three relationships could not exist at once. It is impossible to review either the theoretical argument or the empirical evidence here. A number of economists have provided other tests of the hypotheses (Fisher, Friend). Suffice to say that to this writer the argument appears to be circular, the data being used both to define the concepts and to test their hypothesized relations. In addition, although data from many sources are used, some data from the same sources that seem to give a different result are ignored. Finally, the present author is not convinced that the tendency to jump to simple explanations without a careful analysis of what is being assumed unimportant is a fortunate one. In the words of another commentator, "It is certainly better to be simple than complicated. But is it better to be simple than right?"

Contrasted with these attempts to specify and test a simple consumption function have been a number of detailed analyses of spending-saving behavior using cross-section data, and a much larger number of explanatory variables (Klein, Katona, Morgan, Lansing, Mooney). These analyses are much more complex and difficult to summarize, but have provided insights into the

pattern of saving over the family life cycle, and the relations between saving behavior and liquid asset holding, income changes, expectations, and attitudes. Of course, the motivation inferences must still be indirect.

Some further light is thrown on the consumption function by international comparisons. Three surveys similar to the American Surveys of Consumer Finances have been made in England and reported in the *Bulletin of the Oxford Institute of Statistics* (Klein, Straw, Houthakker, Kravis). The methodology was not identical and the response rates were low, but comparisons are still useful. A survey of consumer expenditures and saving is reported from Israel, by the Israel Institute of Applied Social Research (Sandberg). Such surveys have been made in Puerto Rico and in Ceylon. Surveys of consumer expenditures and saving are also in progress or planned in Canada and Sweden, and a pilot survey was reported from Australia (Harcourt).

2. MAJOR COMPONENTS OF EXPENDITURE—NATIONAL SAMPLE STUDIES

At the next level of aggregation, we have studies of major components of consumer expenditure, and of their ownership of assets. When such studies are based on time series data, they do not tell much about consumer motivation, since only incomes and prices and the consumption behavior of large heterogeneous populations are available as data. Sometimes one can speculate as to the causes of changes, however, in terms of major events. The primary concern of most time series studies is to make estimates of income and price elasticities, and perhaps of trends in

consumption patterns, rather than to explain consumer behavior directly (Prest, Foote, Fox). There have been studies using state data over time, treating states as units (Miller, Maier).

A large number of studies are based on cross-section surveys. Sometimes the purpose is primarily descriptive, sometimes the intent is to get proper weights for a cost-of-living index number, and sometimes to assess the living standards and economic difficulties (or the nutrition levels) of lower income groups. One of the best collections of basic background information and of data for special studies is to be found in the Surveys of Consumer Finances sponsored by the Federal Reserve Board, conducted by Survey Research Center, University of Michigan, and published in summary form in several issues each year of the *Federal Reserve Bulletin*.

In some of these reports, and even more in numerous special studies that have been made on the basis of these same surveys, it is possible to get insights into consumer motivation. The most frequent method is correlational, i.e., by looking at the behavior of various subgroups to whom different things have happened or who have different attitudes or expectations. Negative conclusions can also be drawn as to motives by finding out how much people know about, say, changes in interest rates on U.S. Savings bonds. Sometimes data are available on consumer attitudes as such, e.g., toward buying on installment, or on housing. Studies have been made with these Survey of Consumer Finances data on automobiles (de Janosi), life insurance (Kreinin, Lansing and Morgan, and Institute of Life Insurance booklets) on durables (Klein, Tobin), "consumer investments" (Morgan), and

debt (Katona; Kreinin, Lansing, and Maynes; Tobin).

Other studies have concentrated on the *patterns of relationship* of numerous types of behavior with age or stage in the life cycle, or with the use of expectations in predicting spending behavior (Lydall, Fisher, Lansing and Morgan, Lansing and Withey).

The 1950 Consumer Expenditure study of the Bureau of Labor Statistics is being tabulated in great detail, and monographs are to be prepared on several major categories of expenditure under a grant from the Ford Foundation to the University of Pennsylvania's Wharton School. This will provide a vast body of data, much of it detailed by both income and family size and hence more useful than the 1935-1936 tabulations. It will also provide monographs on such topics as expenditures on durables, behavior of entrepreneurs, etc. Politz has done panel studies of national samples for *Better Homes and Gardens* and for *Life Magazine*, the latter with detailed expenditure data a summary of which has been published (Life, Meredith Publishing Co.)

Vernon Lippitt in a recent Harvard dissertation has done a sophisticated analysis of household equipment expenditures, using primarily 1935-1936 Consumer Purchases Study data as well as time series data. He was able to use only a limited number of explanatory variables, but concluded that the family life cycle was a crucial and important one.

Prais and Houthakker, in another complex and sophisticated analysis of the data from two earlier British studies, concerned themselves primarily with assessing the effects of income and size of family on various categories of ex-

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penditure and on the quality level of the commodities purchased.

National Opinion Research Center conducted a study of medical care, costs, and debts and another on attitudes toward prescription costs and the drug industry, both for the Health Information Foundation (Anderson, NORC).

Survey Research Center did a study of new home buyers (what they wanted and what they got) for the Housing and Home Finance Agency, and another study on life insurance ownership and purchases (Paxton, S.R.C.).

The Department of Agriculture has done national sample studies of expenditures on, and preferences for, various food and clothing items (Hochstim, Brew, Misc. Pub. 706, Ag. Info. Bulls. 65, 964). Perhaps the two most interesting of their publications are on men's clothing: *Men's Preferences Among Selected Clothing Items* contains information on preferences and expressed reasons for them, as well as replies to questions on what men look for in buying these items, and on who in the family makes the actual selection at time of purchase. (We discuss later studies of decision making in the family.) *Men's Preferences Among Wool Suits, Coats and Jackets* reports replies to even more open-ended questions about what men wanted their suits to do for them.

A number of studies have been done but not yet fully published. The Census Bureau did a survey in the spring of 1954 on expenditures on residential property (additions and repairs), but with emphasis on details of expenditure and materials used and very little from which to infer motivation. One preliminary release was issued.

National Analysts did a large study of

about 6000 interviews in the spring of 1956 on food consumption, for the Department of Agriculture. Several reports have been issued by the Department of Agriculture.

A survey of expenditures of hunters and fishers was done at about the same time for the Fish and Wildlife Service by Crossley S-D Surveys.

Professor Jacob Cohen of Bowling Green State University has analyzed some data from the Survey of Consumer Finances and found that, taking into account several other variables, changes in liquid asset holdings do not seem to depend one way or the other on whether or not the spending unit uses installment credit. Doctoral dissertations on consumer debt and on expenditures on cars are in progress at the University of Michigan using data from the Surveys of Consumer Finances.

An extensive national sample survey by Survey Research Center was done in two waves during the spring and fall of 1955. Information was collected on the travel habits and preferences of some 8485 adults (Lansing and Lilienstein). The report is of interest as a careful study of consumer behavior and attitudes in an area of expenditure that is largely discretionary and of a "luxury" nature. These same surveys collected some information on life insurance ownership in much greater detail than ever before, which should also appear in a report by the Institute of Life Insurance. The Department of Health, Education, and Welfare has studied college students' expenditures and sources of income (Hollis). National Analysts has studied the debts of recent purchasers of new automobiles, for the Federal Reserve Board.

3. MAJOR COMPONENTS OF EXPENDITURE—SAMPLES OF SMALLER POPULATIONS

A number of studies of major expenditure categories, though not based on national samples, are still of some interest. We shall omit studies that are both primarily descriptive *and* refer to special populations, even though one could argue that some motivational deductions can be drawn from almost any empirical evidence. These studies can be found in the bibliography.

There are some studies of record-keeping farm families that follow the same group of families over a number of years, hence provide a kind of panel data on reactions to changes in incomes and prices (Freeman, Correll). Of course, these populations are highly selected and tend to be more highly educated and more systematic about their buying behavior.

Robert Ferber of the University of Illinois attempted a panel study with monthly interviews, in order to study the degree to which purchase plans are fulfilled, or purchases planned. The very high loss rate in the panel, however, makes it difficult to assess the quantitative importance of the findings (Ferber).

Other studies of car or durable goods purchases have been based on the re-interview part of the 1952 and 1953 Surveys of Consumer Finances, 1036 spending units who did not move and could be interviewed both in early 1952 and early 1953 (Klein and Lansing, Tobin, de Janosi).

A study of attitudes toward housing and desires to move was done in Philadelphia by Rossi and others (Rossi). There was a follow-up to determine

which families actually moved and both attitudes and factual variables (number of rooms relative to number of persons) were used to explain expected and actual moving. The study was in four regions selected to represent two levels of mobility and two of socioeconomic status, and the analysis plan was derived from Lazarsfeld—concentrating on factors driving families out of their present quarters or attracting them to other homes, plus the information-getting process.

An older study by the Women's City Club of New York is of interest because it shows clearly how moving from the slums to a housing project can raise aspiration levels so that persons who were satisfied and did not want to leave the slums are soon dissatisfied and ready to seek still better housing after a taste of the housing project (Beatrice Friedman).

There are again a number of studies in process that should appear within the next year or so.

Jane Shepard and Lee Wiggins of the Bureau of Applied Social Research, Columbia University, are writing an analysis of a panel study of automobile buying in which Roper interviewed an urban population in television areas three times, oversampling if they expressed an interest in buying a car. As dependent variables, scales on "nearness to purchase," "desire for the product," and "barriers to buying" were analyzed for changes with respect to changes in advertising responsiveness, pressures from other family members, purchase of a new car by friends or relatives, discussions with others, etc. The study is imaginative and different, and attempts to get at the buying process in some detail. Most of the results seem to be

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intercorrelations of attitudes over time without much evidence as to why they changed (except in some of the case studies); and it is possible that at some point a decision is made, either to buy, not to buy, or to postpone thinking about it, after which all the scales would change.

Social Research, Inc., has announced the publication of a volume *Studies of Consumer Behavior*, summarizing much of their research. And Professor Ruby Morris has been analyzing the behavior of 100 automobile buyers in the New London area.

A study in the North Central States of consumer opinions about gasoline prices, price changes, and price setting was conducted in 1955 by Survey Research Center.

A most interesting study is another one by Survey Research Center on the motives and attitudes related to long-distance phone calls based on 400 interviews with a probability sample of residents in the lower half of the main peninsula of Michigan. This is one of the first studies to combine quantification over some well-defined population with the field use of personality measures, and with observation of actual use of the service. (Respondents were allowed to make a free long-distance call at the end of the interview, and their behavior was observed.) Both projective tests and attitude scales were used: TAT on need for affiliation and orientation toward money, selected agree-disagree items for security-insecurity scales, and scales of concern about ease of phoning and the extent to which phoning satisfied affiliation needs. In addition, a rather elaborate multivariate statistical analysis of the data is in process, and an article by Lansing is promised.

4. STUDIES OF COMMODITIES, BRANDS, OR ATTITUDES TOWARD COMPANIES

At a still more detailed level as to aggregation over commodities, there are numerous studies of specific foods and textiles, many of the former on samples in one or a few cities (USDA Rojko). There are also a few studies of substitution between commodities such as butter and margarine, or beef and pork (Morgan, Szatrowski). Finally, there are studies of classes of commodities done by publishers as a service to their advertising clients (Crowell and Collier, Meredith Publishing Co., Parents Magazine). There are also studies of who reads a publication or specific advertisements in the publication, for the same purpose (Starch, Schwerin, NBC). Many of these are not generally available, and the sample of them that this author has seen is probably not representative. A study by Puck of who reads the comics and why is notable for attempts to get into personality factors by a sequence of interviews with the same individuals. A Burleigh Gardner study of the readers of *Better Homes and Gardens* is still more qualitative and less quantitative, but full of insight, and another Social Research study of the readers of *True Story Magazine* makes use of ideas about social class and the tensions arising from social mobility in an interesting fashion. The same organization (Social Research, Inc.) has done studies for the *Chicago Tribune* on automobiles, beer, and cigarettes.

One of the problems with detailed studies of one product or service is that it is difficult to generalize the findings over classes of products. Another is that the sponsors of such studies are generally

not interested in testing hypotheses so much as in developing useful ideas for advertising campaigns; hence the studies are generally qualitative, exploratory, imaginative, rather than precise, quantitative, and directed toward tests of significance. Given the purposes of the sponsors, it is difficult to cavil at this, though even some of the marketing research organizations (National Analysts, Davee Koehnlein and Keating, Roper, Politz) are attempting to do more and more quantitative work with representative samples, and to develop methods of handling psychological materials on a quantitative basis. In the present state of our knowledge about motivation, however, it is still difficult to formulate good operational hypotheses.

Under a grant from the Ford Foundation the Harvard Business School is reputed to be making a study of the whole field of market research, presumably building a set of case materials for teaching. Some of the material appears in a book by Joseph W. Newman.

There are also numerous studies, almost all of them unavailable, of attitudes toward particular brands or toward particular corporations. They generally show that the people have not thought much about the matter and do not much care. A growing number of newspapers are conducting brand preference studies as a service to advertisers, as do advertising agencies. The time-trends are the most useful part of these reports. Summary reports with much less trend information are available from the Canadian Daily Newspaper Association and on American studies from coöperating newspapers. Finally there are taste tests, mostly by or for food processors, and generally secret, of course, though some

appear in *Food Technology*, *Food Research*, *Advances in Food Research*, or as publications of the Bureau of Agricultural Economics.

Up until now we have been categorizing studies according to the level of aggregation over commodities and services, and according to the size of the population covered. A number of types of studies do not fit into this scheme.

5. STUDIES OF THE PURCHASE PROCESS

Studies of information getting, shopping, discussing, decision-making within the family, have been few. Numerous studies have collected fragmentary information on shopping or information level, but few have concentrated on it. The most extensive study is that by Katona and Mueller reported in *Consumer Behavior*, Vol. I. Here a number of indexes of various aspects of decision-making and information-getting (circumspectness, information-seeking, price awareness, brand awareness, and number of features considered) are combined into one over all index of deliberation, and an attempt is made to see why some persons are more deliberate and circumspect than others.

A smaller study by Ruby Norris in the same volume deals with home buying in New London (Norris). An attempt has been made by Bilkey to measure the approach and avoidance tendencies of Lewinian field theory and relate them to purchasing behavior (Bilkey).

Studies of influence of various family members on the decisions to buy various things or on family money-handling have appeared in several places (Ferber, Sharp, Herbst, Knoll, Soutar, Madge, Young, Bott, USDA Misc. Pub. 706,

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Converse and Crawford, Fawcett). They have generally not gone very deeply into the problem of how decisions are made, and have relied on direct statements of the persons themselves, or of their children. A study by Ruth Honey of Pennsylvania State College is in process, and three studies done by Roper for *Woman's Day* are not available.

In general, for what it is worth, the evidence seems to be that the larger items, and particularly furniture, tend to be jointly bought, though the husband seems to dominate somewhat more in the automobile field. British studies of working-class families tend to picture the husband handing over a large fraction of his income to the wife, but expecting her to pay most of the bills. Observers had the feeling that the British husband was keeping out too much for his cigarettes, beer, and amusement. This feeling was intensified by finding that many British wives did not know how much their husbands made, and that the wife's allowance did not increase adequately as more children came along (Madge). The Detroit Area Study findings for Detroit seem to indicate a good deal of joint decision-making, but a reduction in the proportion of cases where the wife had more influence as income went up. This seemed to be true for such decisions as where to go on a vacation, whether the wife should work, whether to buy life insurance and keeping track of the money and bills (Sharp). Studies of contributions and receipts of families to and from relatives outside the immediate family have been made by the Detroit Area Study (*Profile*, 1955), and a study is in process of publication at Cornell on economic contributions and receipts of household members. A

forthcoming study by Betsy Wolgast based on the Survey Research Center Ford panel study data, indicates that purchase plans expressed by wives are fulfilled more frequently than those expressed by husbands.

A peripheral field of research relevant to the problem of decision-making in the family, but in a limited manner because most of the groups were *ad hoc* with little previous acquaintanceship, is that of psychological studies of group processes. (See review articles in the bibliography by Festinger, Thibaut and Kelley, and R. L. French; and the book by Hovland, Janis, and Kelley.)

Closely allied to this are studies of the influence of sociological groups or cultures, or of other persons, on behavior (Strodtbeck, Katz and Lazarsfeld). The Katz and Lazarsfeld book *Personal Influence* reports a number of sources of data, but in particular a study in Decatur, Illinois, analyzing individuals designated by themselves or others as leaders in various areas. One crucial finding of the book is:

The fact that a woman is a leader in one area has no bearing on the likelihood that she will be a leader in another. . . . By and large, . . . the hypothesis of a generalized leader receives little support in this study. There is no overlap in any of the pairs of activities. Each area, it seems, has a corps of leaders of its own (334).

If this is so, it is important to know how some persons become "leaders," and whether they are really altering the basic tastes of others or merely serving as sources of information and ideas.

Anthropological studies such as Raymond Firth's *Elements of Social Organization* and a growing body of literature on the underdeveloped countries from

such sources as the Research Center for Economic Development and Cultural Change at the University of Chicago, provide a general kind of information on the influence of whole cultures on the economic behavior of the people (Theodore Morgan, Hoyt). A basic problem in underdeveloped areas is how to motivate the populace to save, so that investment programs can proceed without inflation or dollar shortages. Hence, more such studies can be expected to appear.

6. THE FAMILY LIFE CYCLE AS
EXPLANATORY VARIABLE

An example of concentration on an explanatory construct with bearing on a wide range of consumer behavior is the recent interest in the family life cycle (Lansing and Morgan, Lydall, Monroe, Morgan). As a crude indicator (1) of the situational changes that affect various incentives to spend money (particularly for household furnishings), (2) of the amount of money families have to spend, and (3) of the incentives to save for future purposes, the life cycle is extremely useful. Its influence on expenditures on household durables is so strong that any cross-section study that neglects it is in grave danger of producing mostly spurious correlations. Young marrieds buy a great many things, and young, highly educated upper-middle income people are more likely to answer mail questionnaires. Hence, using valid data on the behavior of the young marrieds and questionable data from a mail inquiry on the composition of the subscribers to a magazine, it is possible to make the magazine appear to be an excellent advertising medium.

Sociologists have also had much to

say about social status or socioeconomic status as a determinant of attitudes or social behavior, but strangely enough they have only rarely used the concept to explain the behavior of consumers. The only exceptions are some recent studies on the use of leisure and two doctoral dissertations (Spielman, Graham).

7. SATURATION, ASPIRATION LEVELS,
AND THE ACHIEVEMENT MOTIVE

A crucial problem in a high-income society such as ours is what happens when everyone has one of each of the major appliances in working order, i.e., the problem of "saturation." If consumers continually upgrade their cars and appliances and houses, by trading them in on newer ones, or if they continue to purchase the new products such as air conditioning, color television, etc., then there is no real saturation. In both cases, the consumer is accepting innovation either in the form of a new product or in the form of a better model of an old product. Strangely enough, there has been very little research on reactions to innovations, and what kinds of persons are most "American" in this respect. A major exception is the study by Eva Mueller incorporated in this volume. There have also been studies of the penetration of TV (Oxenfeldt) and there are illuminating data (Survey of Consumer Finances, Detroit Area Study) on the changing distribution of TV ownership over time among different groups, from which one might infer something about the motives that prompt acceptance of that innovation. There is also a Yale dissertation that relates social class to the buying of new products (Graham). It seems likely that the general problem of producing con-

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tinually growing aspiration levels that will keep consumers spending money is as important to America as the problem of developing the desire to save and invest may be for countries with greater needs for investments and less institutional and traditional devices for providing the necessary offsets automatically.

8. CONFLICT AND HABIT

It seems likely that most individuals are influenced in their choices by more than some simple static or even dynamic utility maximization. A number of areas of research have some bearing on this. For one thing, economic choices inevitably involve some conflict of alternatives, and studies of conflict resolution show that, where the conflict is intense, certain patterns of behavior may tend to develop that could hardly be described as rational resolution of the conflict (Dan Miller). Sometimes these defense mechanisms become entrenched and persist even when the situation changes. The psychology of habit as well as of conflict and of abnormal persons is involved here, except that the research has almost never dealt with economic conflicts specifically. Also, the economist continues to hope that all these things average out so that they can be neglected.

9. UTILITY, SUBJECTIVE PROBABILITY, AND OTHER EXPERIMENTS ON CONSUMER CHOICES

In recent years both psychologists and economists have been interested in studies attempting to measure utility and/or subjective probability (Edwards, Coombs, Benson, Papandreou, Mar-

schak, Davidson and Suppes, Mosteller and Nogee). The prime interest has been measurement, or testing consistency, rather than explaining behavior. Certain methodological problems have remained serious: thresholds; the problem of separating utility, subjective probability, and attitudes toward risk and gambling; and the problem of how to deal with apparent inconsistencies in choices. Ward Edwards has shown that people seem to *prefer* certain probabilities, particularly the fifty-fifty chance, with expected values constant. This may well be related to the utility of risk. Recent work by Atkinson indicates that if individuals attach a high achievement incentive to tasks with a low probability of success (there is more glory in doing something difficult), then it would be near the fifty-fifty chance where the lower chances for success and the higher achievement rating of that success produce the greatest motivation. This supposition would apply even to the gambling situations if there is some special satisfaction in winning a bet even though the odds are against you.

Very little experimental research has been done directly on consumer choices, aside from taste preference experiments. Benson reports a study of menu item choices using prices and a total expenditure constraint.

Just before his death, the famous psychologist Thurstone was carrying on experiments relating expressed preferences for menu items to the actual choices of the individuals in a cafeteria line, and a joint article by Thurstone and Lyle V. Jones on the results is expected.

Baker and Berry report a fascinating experiment where the prices of whole

and skim fluid milk were changed every two months in a Latin square design to see how well one substituted for another. They compare the results with a cross-section study of markets with different prices, with a time series study, and with the answers to questions in an interview about what respondents would do if various things happened to the price of skim milk. Persons interviewed overestimated their willingness to shift, and the short-run experimental-case shifting was less than in the intermarket study, perhaps because more time was allowed for making adjustments in the latter. Godwin reports an experiment varying the retail prices of oranges, and another in packaging of fruits and vegetables.

10. RELATIONS OF ATTITUDES TO
BEHAVIOR, AND OF EVENTS AND
EXPERIENCES TO ATTITUDES

We come finally to an area of ongoing research that seems to this author the most promising approach toward solving the economists' immediate problems, particularly those having to do with determinants of the general level of spending and saving. Going back to our diagram, if we interpret the problem as the dynamic one of change in behavior over time, it would then be necessary to see what variables in the chart could change. Assume that the behavior in question was the whole category of decisions whether to restrain spending and save money, or to buy the new things and "live it up," and assume further since we are interested only in the behavior of large groups of consumers, not of individuals, that we can neglect both things that do not change over time, and those for which the changes plus or minus are randomly

distributed in the population and cancel themselves out. By definition, the basic needs (motives) of individuals are stable personality variables, affected chiefly by childhood training, e.g., in independence, so that only in comparing cultures or major subgroups in other cultures or looking at changes over generations should they be crucial in dynamic interpretations. The same can be said for almost all the factors affecting what we have called the "decision-making characteristics of the individual." Constraints are situational variables that can be handled in empirical work without too much difficulty, though more research on what is and is not socially acceptable consumer behavior would help here.

This leaves us with expected outcomes and incentives, and with general optimism-pessimism, as the dynamic factors subject to change as events and experiences affect individuals.

Of course, the incentives and expectations have to do with the perceived ability of certain actions or choices to move the individual toward basic goals such as achievement, status, security, and affiliation with his fellows. A full-scale research program trying to assess saving-spending decisions in terms of how they are seen as potential contributors to these basic needs would be a tremendous undertaking, particularly since the crucial problem is how past experience and events affect the expectancies and incentives. But there are some ways of getting into the problem without solving it all at once.

The individual puts together out of his own needs, incentives, and expectations some attitudes, predispositions to action, or—in economic terms—expected relative utilities of alternatives.

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Hence, by going directly after attitudes, one can sometimes short-cut many difficulties. Furthermore, we know that a great deal of behavior, including consumer behavior, is not based on highly motivated weighing of alternatives (genuine decision-making involving thought, consideration, discussion, etc.) but relies on habitual rules of action and expectations based on experiences with roughly similar types of choices previously made. Hence, a strong case can be made for studying attitudes directly as representing an intermediate stage, and seeing how changes in attitudes relate to changes in behavior.

If one also assumes that security for the future is a crucial need associated with saving and that both the expectancy that certain actions will produce that security, and the incentive level of specific provisions (expected need for such security reserves as a debt-free home or a bank account) will be changed by major events such as war, inflation, and elections, then a useful research program involves investigating (1) the relation of both events and previous experience to attitudes, particularly those associated with optimism and confidence versus pessimism about one's own and the country's economic future, on the one hand, and (2) the relation of changes in these attitudes to spending-saving behavior, the acceptance of innovations, etc., on the other. This is the type of research program that Professor Katona and his associates at the University of Michigan have been conducting in recent years. The research has taken two major forms: First, there has been an attempt to measure as frequently and as well as finances permit, a number of attitudes and expectations of consumers using

representative cross-section samples large enough so that changes in the attitudes of major subgroups (regional, income-wise) can be measured reliably. Changes in attitudes are then related to subsequent changes in spending-saving behavior for the whole consumer population (from aggregate statistics) and for major subgroups (from subsequent surveys, including the Surveys of Consumer Finances). Reports of this work have appeared in two books, *Consumer Attitudes and Demand, 1950-1952*, and *Consumer Expectations, 1953-1956*, both by Katona and Mueller.

The forthcoming volume on the National Bureau Conference on the Quality and Economic Significance of Anticipations Data, held in Princeton in November, 1957, contains several important articles on this matter.

The findings on purchase plans and on other attitudes are inconclusive—sometimes significantly related to behavior, sometimes not. It is not easy to apply statistical tests in this area, or to interpret them correctly. It is changes in attitudes that are presumably related to changes in behavior, and dealing with changes cancels out the effects of many differences in personality or in individual situations which would have affected the relation between individual attitudes and individual purchasing behavior. Only if one had three successive interviews with the same persons would one be able to relate changes in initial attitudes to changes in individual behavior in the same way (but with more detail). And if there are negative serial correlations in individual spending on durables, so that they buy every other year, some averaging over groups would make relationships easier to find even with reinterviews.

It is true, in addition, that it is difficult to infer much from such studies about the origin of changes in attitudes. A second research program at Survey Research Center has been a study sponsored by the Ford Foundation in which individuals have been interviewed five times at six-month intervals. This panel study allows for much more detailed analysis of what sort of events, general or specific to the family, seem to cause changes in attitudes, as well as an analysis of the more atomistic relation of changes in attitudes to subsequent changes in behavior. Several published reports will be forthcoming (Mueller). It would be useful to have this panel study continued over a longer period of time, of course.

This is not to say that one cannot draw useful inferences about consumer behavior and motivation from relations of demographic and financial data to behavior. It is for this reason that we have included in the bibliography numerous studies of consumer expenditures. It is also true that one can learn something about consumer behavior from market research and even reader-ship studies, though here the decisions investigated are more detailed choices between categories of expenditure. It is probable that economics as a science will be advanced fastest by studying consumer allocations of their incomes among the three major uses: saving, investing in houses and durables, and spending for current consumption. While there are now numerous organizations collecting data on expectations and plans of businessmen, the only other national survey of consumer plans other than the Survey of Consumer Finances and the Survey Research Center's interim surveys, was a study

done in early 1956 by Politz for *Look Magazine* (Poltiz).

SUMMARY AND PROSPECTS

We have made a rapid aerial trip over a wide range of research varying in many dimensions: the level of aggregation, the emphasis on static or dynamic explanations (behavior versus changes in behavior), the type of data (behavior, opinions and attitudes, expressed preferences, projective or other indications of subconscious factors), and the level of simplicity and immediacy (few versus many variables, attitudes plans and demographic situation versus motives, incentives, expectancies), and techniques of securing data (records, surveys, or experiments). We have concentrated on research that seemed most directly relevant to major consumer choices rather than details of the consumption pattern or choices of brands and to dynamic rather than static explanations. We have mentioned the peripheral research that seemed to promise aid in future research in these areas. It is the author's feeling that, particularly for major consumer decisions, the explaining and predicting of which is crucial both for economics and for national policy, research that makes use both of correlations (data on who did what) and of expressed attitudes and expectations and plans, and their interrelations with past and future action, is essential. Further, it seems clear that a proper definition of what are the relevant attitudes will require more detailed research on the personality level as to the interrelations of motive, incentive, and expectancy and their relation to action, and in particular much better answers

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to the question how incentives and expectancies change.

Consequently, the answer to the question: "Where to from here?" is that we must work on several fronts:

1. Continuation of research on the relation of attitudes to behavior and on the sources of changes in attitudes is vital. And continuation of periodic measurement of attitudes to develop attitudinal indexes over periods that can be related to major events goes hand in hand with it.

2. Further work is needed on the effects of the family and larger reference groups on behavior, together with studies on social mobility and attempts to answer the question why individuals adopt the reference groups, self-perceptions, and roles they do.

3. We need to continue the periodic assessment by representative samples of the financial condition and behavior of consumers, as in the Surveys of Consumer Finances, so that we know who is doing what, and also know what sorts of inherent (spurious) correlations will affect any other studies we make. These data, as they form a longer and longer time series, become even more useful in assessing the impact of major events on the behavior of well-defined subgroups of the population.

4. More studies based on aggregate data will and should be done. As more data become available for subgroups of the population such aggregate studies will become more revealing.

5. Perhaps the most important need but also the most difficult and time-consuming, is for both laboratory experiments and intensive panel studies that attempt to push back into the motive-incentive-expectation categories as the sources of attitudes and behavior. As-

suming for the moment (and there is some evidence for this) that a major consumer choice is between voluntary expenditures on postponable durable items or on vacations on the one hand, and debt repayment and saving on the other; how can we predict changes in these choices? What dynamic factors or events or new insights will change expectations that a certain choice among these will actually help satisfy a certain need? What will change the incentive value of a particular outcome with respect to that need? How rapidly does the incentive value of a vacation or a new durable increase as one gets farther from the last one—i.e., what determines how fast "having been on a vacation" depreciates? Can events be interpreted as affecting either the belief that money in the bank will really be useful ten years hence or people's evaluation of the relative importance of retirement security as against present satisfactions?

The ideal situation for the future is one in which the laboratory work leads both to specific hypotheses and to operational measuring devices, which can be used with representative samples of individuals and at regular intervals so that the laboratory results can be placed in their perspective and related to salient events that happen to these individuals and salient decisions they make in real life. There is much to be done, and it is to be hoped that more economists and more psychologists and more sociologists will become interested in this field of research in the future.

6. Needless to say, a vast body of research is accumulating and should continue to accumulate, relating simple demographic and financial variables to consumer behavior variables. The data from these studies are useful for making

projections, and for some indirect inferences about motivation as well. Even in such a high-income culture as our own, there are economic and other constraints on consumers, and some of their needs are still for basic things like the physical comforts. Hence income and the number of the people in the family should still explain much of the demand for housing, etc.

The author is aware that this review is affected by his background training and interests, and by his opinions as to which research problems are most important. It is to be hoped that the bibliography will make up for this by presenting, so far as possible, a view of all the available research relating to consumer behavior the author has been able to find.

APPENDIX

A Note on Sources of Information on Current Research

Research on consumer behavior is still being carried on somewhat independently by researchers in several traditions, disciplines, or types of organization:

Economists tend to concentrate on studies of the aggregate consumption function, or in income and price elasticities for commodities. Their research tends to be published in the regular economic journals, particularly in *Econometrica*, *Review of Economics and Statistics*, or *Journal of Farm Economics*, but may also be scattered throughout the economic literature or in bulletins of schools of business or bureaus of business or economic research. Each September the *American Economic Review* prints a list of dissertations completed and in progress. New York University has published abstracts

of economics articles since 1953 in *Economic Abstracts*.

Home economists concentrate on shopping and buying habits, level of information, family money handling. Their research tends to be left in Masters' and Doctors' theses, but some of it is published or summarized in the *Journal of Home Economics* particularly the March issue, or published state agricultural experiment station bulletins. The March issue of the *J.H.E.* contains a review of research, and Elizabeth Wiegard has prepared bibliographies in 1954 and 1955 for the American Home Economics Association.

Market researchers for producing companies, with a few exceptions, do not publish at all. Their results are trade secrets, and any publications are likely to be reports on methodologies.

Market research of advertising agencies or publishers of periodicals is sometimes secret, sometimes available to a limited audience, and sometimes broadcast to anyone. They concentrate on products, rather than brands, though many newspapers do brand-preference studies as a service for their advertisers. Most of this research is not published through any ordinary channel, but comes out in booklets available from the agency or publisher. A continual check of *Printers Ink*, *Tide*, *The New York Times*, *Business Week*, *Wall Street Journal*, *Advertising Age* will dredge up news reports of some of these studies. Some of the larger studies are reported in some detail in the *Journal of Marketing*, or appear in the marketing bibliography in that journal.

Agricultural marketing research tends to be done by the US Department of Agriculture or by state agricultural experiment stations, hence appears as government bulletins or state agricultural experiment station bulletins. The former are easy to check through the *Monthly Catalogue of Government Publications*

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or special checklists. The latter can sometimes be found in the USDA's *Bibliography of Agriculture* or in the USDA Agricultural Research Service, Office of Experiment Stations' *Bibliography of Research in Foods, Human Nutrition, and Home Economics at Land Grant Colleges and Related Institutions*. The Market Surveys section of the Agricultural Marketing Service, USDA, also issues bibliographies of its reports, not all of which are included in the bibliography of this review. The US Office of Education publishes an annual summary of theses completed in home economics and related subjects.

Psychological research on motivation, learning, pressures to conformity, group problem solving and decision-making, perception, etc., is well abstracted in *Psychological Abstracts*, reviewed in the *Annual Review of Psychology*, or discussed in annual reports of the *Nebraska Symposium on Motivation*. In addition, psychologists have a penchant for writing review articles, e.g., in *Psychological Review*. Sociological research is now well covered in *Sociological Abstracts*, at least as to what exists. Strangely enough, while the sociologists have pioneered in the use of two variables, the family life cycle and socioeconomic status as explanations of a great deal of human behavior, there are extremely few sociological studies that use any economic behavior as the dependent variable. Housing and the uses of leisure appear to be the two exceptions, and there are few studies even in these areas by sociologists. Furthermore, while social and spatial mobility have been studied, their economic implications have been largely ignored. A study of the lists of dissertations in the *American Journal of Sociology*, each July, will show whether this emphasis is changing.

In the field of medical care, the Health Information Foundation publishes an annual *Inventory of Social and*

Economic Research in Health, the US Department of Health, Education, and Welfare publishes *Sources of Morbidity Data*, and the USDA publishes a bibliography, *Rural Health*. For government-supported research the National Science Foundation publishes a *Quarterly Report on Government Sponsored and Government Supported Research—Social Science and Interdisciplinary Areas*.

In addition to all this, it is necessary to keep an eye on the major research groups that put out reports on some of their research, and occasionally publish a bibliography or list of publications. In the field of consumer behavior, neither National Opinion Research Center (Chicago) nor the Bureau of Applied Social Research (Columbia) has been carrying on many studies in recent years, but one never can tell. Market research organizations, listed in the Advertising Research Foundation's *Directory of Organizations which Conduct Motivation Research*, publish little or nothing, but sometimes discuss parts of their recent studies. The National Bureau of Economic Research in New York publishes a great deal, and recently more of it has been on consumer behavior. Many of their books are essentially rewritten conference papers that are available in mimeographed form, sometimes for several years before they are finally published. University Bureaus of Business Research seem to be among the most difficult to keep track of. One writer has reported that in at least twenty states, studies have been made of the tourist trade, but the author has been able to find only a few of these. The Institute for Tourist Trade (Institut für Fremdenverkehrswissenschaft) at the University of Frankfurt am Main in Germany studies the European tourist trade. The Cowles Foundation at Yale puts out mimeographed discussion papers to a limited list of persons, and has published monographs. Much of its work

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appears in *Econometrica* or in books. Finally, perhaps the main source of representative descriptive data on consumers, and of special studies on major aspects of their behavior, is Survey Research Center, University of Michigan, which issues occasional lists of publications.

It is also, unfortunately, true that many small studies are either never completed, or never reported; and it is also true that at any point in time there are a great many studies still "in progress" because it seems to take a great deal of time to analyze and write up the results of empirical studies. Finally, it also seems to be impossible to convey to the reader an exact picture of what was actually done in a research project, so that an adequate evaluation cannot be made of most studies. Even such a relatively simple matter as the sampling procedure is almost never adequately reported.

A number of bibliographies or review articles or reports with extensive attached bibliographies are in the bibliography appended to this review; see in particular the following names:

Advertising Research Foundation
Bristol
Campbell
Dashiell
Dukes
Edwards
Foote
French
Griffiths
Hare
Hilgard
Hood
Hovland
Kelley
Lorge
Mack
McClelland
National Science Foundation
Newman
New York University

Postman
President's Commission on the Health
Needs of the Nation
Revzan
Stigler
Strunk
USDA Library
USDA Office of Experiment Stations
US Dept. of Health, Education, and
Welfare, Public Health Service
Wiegand
Williams
Young

A Bibliography of Recent Empirical Research on Consumer Behavior

Adams, Leonard P., and Mackesey, Thomas W. *Commuting Patterns of Industrial Workers*. Ithaca, New York: Cornell University Housing Research Center, 1955 (Research Publication No. 1).

A collection of data and summary of other studies as to attitudes toward housing and the journey to work. Includes findings from a mailed questionnaire, and one distributed to long-distance commuters.

Adkins, William G., and Motheral, Joe R. *The Farmer Looks at His Economic Security*, A Study of Provisions Made for Old Age by Farm Families in Wharton County. Texas College Station, Texas, January, 1954. (Texas Agricultural Experiment Station, Bulletin 774.)

Interviews with 257 farm operators and 60 farm laborers. Few had made definite plans for retirement.

Advertising Research Foundation. *A Short Annotated Bibliography of Marketing and Advertising Research*. New York: Advertising Research Foundation, 1953.

A pamphlet containing 127 items under the following headings:

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Sampling, Questionnaire Construction, Interviewing, Editing, Coding, Tabulating, Preparation of Report, and Bibliographies.

Aikin, A. "Survey Reveals Facts on Family Costs," *Agr. Leaders Digest*, 29(9): 56. 1948.

Alkjaer, Ejler, *The Market for Wine in Denmark*, Danish National Committee of the International Chamber of Commerce, Copenhagen, 1953, 34 p. (International Chamber of Commerce, Market Handbooks).

Allen, R. G. D., and Bowley, A. L., *Family Expenditure, A Study of its Variation*. London: P. S. King and Staples, Ltd., 1935.

Family expenditure and family income, combined with proportion of community income spent on a given commodity, to get "income elasticities."

Allison, Harry E. "An Analysis of A Consumer Panel As A Source of Demand Study Data." Ph.D. thesis. Cambridge, Mass.: Harvard University, 1955.

Allison, John D., "An Analysis of Levittown, New York, with Particular Reference to Demand Satisfaction from Mass-Produced Low Cost Housing." Ph.D. thesis. New York: New York University, 1956.

American Gas and Electric Service Corporation. *Our Customers' Opinions, Customer Opinion Survey, Comparative Consolidated Report, 1954-1953*. New York: American Gas and Electric Service Corporation, Statistical Department, 1955.

Annual: 1953, 1954, and another in 1955. Attitudes, such as reasonableness of profits, and regulation of rates. Most data broken down by company serving the person.

American Medical Association. *What Americans Think of the Medical Profession*. Chicago, Ill.: American Medical Association, 1956.

A survey by Ben Gaffin and Associates interviewing 3000 members of the general public, 500 physicians in private practice, 100 editors, columnists, and commentators, 100 lawyers, 100 pharmacists, 100 registered nurses, and 100 executive secretaries of state and county medical societies. Comparative attitudes toward the profession, medical insurance, the AMA, etc.

American Petroleum Institute. *Those Who Know You Well . . . Think Well of You, A Report of the Opinion Research Corporation to the American Petroleum Institute*. New York: American Petroleum Institute, 1946.

Attitudes toward the industry, based on a "sample" of over 10,000. Availability uncertain.

Amos, Thyrsa W. "What Tenants Want in Housing," *Architectural Record*, V August, 1938, 63-65.

A survey of 70 families living in apartments in New York City.

Anderson, Odin W. *National Family Survey of Medical Costs and Voluntary Health Insurance*. New York: Health Information Foundation, 1954.

An earlier and less complete report of the survey reported again in the book by Anderson and Feldman. 2809 families in two national samples were interviewed by NORC on insurance, expenditures, utilization of medical services, and medical debt.

Anderson, Odin W., and Alksne, Harold. *An Examination of the Concept of Medical Indigence*. New York: Health Information Foundation, circa 1955 (processed).

Study of 83 medically indigent families in Anne Arundel County, Maryland. They were chronically poor with other problems, had

lower income than those on public assistance (because of no assistance), tended to shift from program to program.

Anderson, Odin W., with Jacob J. Feldman. *Family Medical Costs and Voluntary Health Insurance; a Nationwide Survey*. New York: McGraw-Hill Book Company, 1956.

A national survey conducted by National Opinion Research Center for the Health Information Foundation. Information on medical costs and debt and medical insurance.

Applebaum, W., "Studying Customer Behavior in Retail Stores," *Journal of Marketing*, XVI (October, 1951), 172-78.

Applebaum, William, and Spears, R. F. *Shopping Habits of Supermarket Customers*. Boston: Stop and Shop, Inc., 1947.

Availability uncertain.

Applebaum, William, and Spears, Richard F. "Controlled Experimentation in Marketing Research," *Journal of Marketing*, XIV (January, 1950), 507-15.

The authors discuss the difficulties in obtaining representative situations and reliable controls in market research of this type. They go on to describe some of their experiences in this matter at supermarkets.

Armour, Sidney J. *The Demand and Price Structure for Food Fats and Oils*. Washington, DC: US Government Printing Office, 1953. (US Department of Agriculture, Technical Bulletin 1068.)

Armour, J. F. E. "The Furniture Buying Procedures of a Group of Recently Married Madison Consumers." Master's thesis. Madison, Wis.: University of Wisconsin, 1951.

Atkinson, John, "Motivational Determinants of Risk-Taking Behavior,"

Psychological Review, November, 1957.

Atkinson, John, ed. *The Assessment of Human Motives*. New York: D. Van Nostrand Company, to be published in 1958.

Reports on a series of studies of human motivation with careful distinction between motives, incentives, and expectancies.

Atkinson, John W. "Exploration Using Imaginative Thought to Assess the Strength of Human Motives," in *Nebraska Symposium on Motivation*, 1954. Lincoln, Neb.: University of Nebraska Press, 1954.

Reports experimental results, some of which relate strength of achievement motive to problem-solving effort expended.

Atkinson, L. J. "The Demand for Consumers' Durable Goods," *Survey of Current Business*, XXX (June, 1950), 5-10.

A statistical study.

Atkinson, Thomas R., *The Pattern of Financial Asset Ownership Wisconsin Individuals*, 1949, Princeton: Princeton University Press for the National Bureau of Economic Research, 1956.

Based on a sample of state income tax returns which must report income yielding assets.

Auble, A. G., and Boyd, H., "An Analysis of Purchase Rates by City Size," *Journal of Marketing*, XVII (April, 1953), 411-16.

Axelrod, S. J., and Patton, R. E. "The Use and Abuse of Prepaid Comprehensive Physicians' Services," *American Journal of Public Health*, XLII (May, 1952), 566-74.

This study found abuses by patients rare and minor.

Babcock, Joyce V. "Life Insurance Information and Practices of Homemakers in Ames, Iowa." Master's

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- thesis. Ames, Iowa: Iowa State College, 1952.
- Backus, Kimball L., Lewis, Harry and Ray, H. A. *A Survey of Consumers Regarding the Purchase and Use of Eggs in Wichita, Kansas*. Topeka, Kans., June, 1949. (State Board of Agriculture, Division of Marketing, Kansas State Board of Agriculture, Mimeographed Bulletin.)
- Baill, I. M. *The Farmer and Old-Age Security, A Summary Analysis of Four Studies, 1951-54*. Washington, DC: US Government Printing Office, December, 1955. (US Department of Agriculture, Agricultural Marketing Service, Agriculture Information Bulletin 151.)
- Summarizes results of four state studies already published as state agricultural experiment station bulletins: Connecticut, Bulletin 299 by McKain, Baldwin, and Ducoff; Wisconsin, Bulletin 182 by Sewell, Ramsey, and Ducoff; Texas, Bulletin 774 by Adkins and Motherall; Kentucky, Bulletin 626 by Gallo-way.
- Most did not have adequate preparation for old age, and did not plan to retire unless their health failed. 406, 658, 317, and 204 interviewed. Vast majority favored OASI coverage.
- Baker, Donald J., and Berry, Charles H. "The Price Elasticity of Demand for Fluid Skim Milk," *Journal of Farm Economics*, XXXV February, 1953), 124-29.
- Adapted from two Masters' theses, using three methods: price-sales relations at each of five points in time for different local markets (34 federal order markets); multiple correlation of five-year time series for 9 markets; and a controlled experiment on the consumers of milk from the University of Connecticut dairy. The third gave lower price elasticities than the other two, perhaps because the time allowed for adjustment was shorter. Also asked consumers what they would do, and found they changed less than they said they would.
- Baker, Ralph L., and Goldman, Alan S. "Habits, Preferences and Demands of Des Moines Egg Consumers," *Poultry Science*, XXX (May, 1951), 329-39.
- Bakken, H. H., and Kelly, R. A. *Consumer Preference for and Definitions of Potato Sizes*. Antigo, Wis.: Wisconsin Potato Growers, Inc., May, 1951.
- Bales, R. F., and Strodtbeck, F. "Phases in Group Problem Solving," *Journal of Abnormal and Social Psychology*, XLVI (October, 1951), 485-95.
- Results of analyzing some laboratory cases of group problem-solving to see whether the various types of interaction categories set up by Bales tend to come in regular order, i.e., with orientation first and integration last. May be relevant to purchase planning and decision making in the family.
- Bandeem, Robert A. "Automobile Consumption" (abstract), *Econometrica*, XXIV (April, 1956), 190.
- Abstract of a paper relating 1940 to 1950 changes in consumption of automobiles (depreciation) by states to changes in state income and population density.
- Banks, Seymour, "The Measurement of the Effect of a New Packaging Material Upon Preference and Sales," *Journal of Business*, XXIII (April, 1950), 71-80.
- Banks, Seymour. "The Relationships Between Preference and Purchase of Brands," *Journal of Marketing*, XV (October, 1950), 145-57.
- Employs the technique of linear discriminant functions to obtain

the most important attributes of cleansers and coffee (i.e., those attributes that distinguish between buyers and nonbuyers). "Significant" attributes for purchase were not the same as those for preference (e.g. price).

Banna, Antoine, Armore, Sidney J., and Foote, Richard J. *Peanuts and Their Uses for Food*. Washington, DC: US Government Printing Office. (US Department of Agriculture Marketing Research Department 16.)

Barton, S. G. "The Life Cycle and Buying Patterns," in *Consumer Behavior*: Vol. II, *The Life Cycle and Consumer Behavior*, Lincoln Clark, ed. New York: New York University Press, 1955.

Provides some findings from the Market Research Corporation of America's consumer panel on effects of presence of children in the home on purchasing, and on behavior of those of marriageable age and newlyweds.

Basmann, Robert L., "Application of Several Econometric Techniques to a Theory of Demand in Variable Tastes." Ph.D. thesis. Ames, Iowa: University of Iowa, 1955.

Baum, E. L., and Corbridge, I. L. *An Economic Study of Dairy Products Consumption, Seattle, Washington*. Pullman, Wash., January, 1953. (State College of Washington, Washington Agricultural Experiment Stations, Technical Bulletin 8.)

Lower-income families expressed more desire for more butter if they could afford it. Some brand preference questions. Attitude toward dairies, frequency of delivery, 2-quart containers, existence of discounts, knowledge of milk nutrients. Most did not have a food budget.

Desire for better quality most in evidence in meat. Preferences were

related to income, age, sex, race, education, and ethnic background. Baum, E. L., and Corbridge, I. L. "Household Income, Food Expenditures, and Desires in Seattle, Washington," *Journal of Farm Economics*, XXXVI (February, 1954), 135-39.

Interviews with 646 households in Seattle in September 1950, on food expenditures and desires for additional food.

Baum, E. L., and Elkington, C. M. *Preferences in the Use of Butter and Oleomargarine in Spokane, Washington*, 1952. Pullman, Wash., May, 1952. (Washington Agricultural Experiment Stations, Circular 187.)

Attitudes of 1099 housewives.

Bayton, James A. "Consumer Preference Research in the Department of Agriculture," *Agriculture Economics Research*, II (October, 1950), 105-112.

Describes Department of Agriculture studies concerning foods and textiles, citing a few results. Consumers choose on the basis of an (ill-defined) notion of "quality," based mainly on appearance.

Bayton, James A., and Bell, Hugh P. *Preferences for Canned Orange Juices That Vary in Brix-Acid Ratio*. Washington, DC: US Government Printing Office, December, 1954. (US Department of Agriculture, Agricultural Marketing Service, Marketing Research Report 76.)

An area probability sample in Indianapolis of 720 households, having all persons 16 years of age or over taste juices. 446 to 487 people rated each of the 6 juices. Preferences turned out to be bimodal, some liking tart and some sweet juices. A complex experimental design, but juices were tasted separately and rated on a single scale (no paired comparisons or rank-

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- ings). Field work was done by S-D Surveys, Inc.
- Beals, Ralph. *Cheran: A Sierra Tarascan Village*. Washington, DC: US Government Printing Office, 1946. (Smithsonian Institution, Institute of Social Anthropology, Publication 2.)
- Reports a number of cases where the observer thinks different production or emphasis would be more profitable, but they are not adopted, because maize is more important than money.
- Beals, Ralph, Carrasco, Pedro, and McCorkle, Thomas. *Houses and House Use of the Sierra Tarascans*. Washington, DC: US Government Printing Office, 1944. (Smithsonian Institution, Institute of Social Anthropology, Publication 1.)
- Getting better housing is mostly altering a culture pattern.
- Beegle, J. A., and Loomis, C. P. "The Life Cycles of Farm, Rural Nonfarm and Urban Families in the United States as Derived from Census Materials," *Rural Sociology*, XIII (March, 1943), 70-74.
- Bell, Hugh P. *Preferences for Canned Grapefruit Juices*. Washington, DC: US Government Printing Office, December, 1955. US Department of Agriculture, Agriculture, Agricultural Marketing Service, (Marketing Research Report 108.)
- Results of discrimination (taste) tests given to 622 homemakers in Indianapolis, by S-D Surveys, Inc. There were no important differences by age, sex, or income, but labels made a difference as did added sugar.
- Belshaw, Cyril S. *Changing Melanesia, Social Economics of Culture Contact*. Melbourne, Australia: Oxford University Press, 1954.
- Contains chapters on alterations in preferences, land, labor and capital, and property and organization, and production and exchange. Much detail, but difficult to transfer to other problems of consumers, and little on aspiration levels.
- Benedict, R. Palmer. "Determination of Soldier's Food Wants," *Symposium on Measurement of Consumer Wants*. Philadelphia, Pa.: American Society for Testing Materials, 1952, pp. 15-24. (Special Technical Publication 117.)
- Discusses methods and some results, mostly on preferences, however, not on why, except for crude geographic and age variables.
- Benner, Robert W., and Wolff, Reinhold P. *Characteristics of Miami Beach Hotel Guests, 1954-55*. Coral Gables, Fla.: Bureau of Business and Economic Research, University of Miami (processed, no date).
- 10,000 questionnaires from hotel guests: age, number of visits, origin, expenditures, length of stay. Sample biased by too many off-season guest replies.
- Bennett, Victor W. "Consumer Buying Habits in a Small Town Located Between Two Large Cities," *Journal of Marketing*, XI (April, 1944), 405-16.
- Bennett, Victor, and Wurst, Charles. *Characteristics of the Tourists of Greater Miami, 1951-52*. Coral Gables, Fla.: University of Miami, 1953.
- 1152 usable returns from Miami tourists concerning origin, expenditures, length of stay, and radio and TV listening.
- Bennett, W. R., "Consumer Reaction to Self-Service Meat Marketing," *Current Economic Comment*, XIII (November, 1951), 42-46.
- Benson and Benson, Inc. *The Crowell-Collier Alcoholic Beverage Survey, 1950*. New York: Crowell-Collier Publishing Co., 1951.

4039 interviews with a "representative sample" of men in urban (2500 or over) areas where liquor can be legally sold. A quota sample, with sampling of blocks in larger cities, with four interviews per block.

Data on what people drink, serve, and purchase, by age, income and region.

Benson, Purnell H. "A Model for the Analysis of Consumer Preference and an Exploratory Test," *Journal of Applied Psychology*, xxxix (October, 1955), 375-81.

By asking people preferences (by paired comparisons) between items with price tags attached, he can maximize scale values (in standard error units) with respect to choice of several components of a meal or component characteristics of a product.

Berelson, Bernard. "What 'Missing the Newspaper' Means," in *Communications Research*, 1948-49. New York: Columbia University, Bureau of Applied Social Research, Harper & Brothers, 1949.

Berg, H. W., Filipello, F., Henreiner, E., and Sawyer, F. M. "Consumer Wine Preference Methodology Studies at California Fairs," *Food Technology*, ix (1955), 90-93.

Various methods—ranking, triangle, paired comparisons, and hedonic scale—were used. Some results are given but emphasis is on method.

Berman, Barbara. "An Intensive Cross-Section Study: Family Clothing Expenditure, 1935-36," in *Report on Research for 1955*. Cambridge, Mass.: Harvard Economic Research Project, March, 1956 (processed).

Estimates of regressions of clothing expenditure on income by family type and region from the BLS 1935-1936 study data.

Berry, Charles H., Anderson, E. O., Baker, D. J., Brinegar, G. K., Dowd, L. R., and Johnson, S. *The Demand for Fluid Skim Milk, Report of a Controlled Experiment*. Storrs, Conn., May, 1956. (Storrs Agricultural Experiment Station, University of Connecticut Bulletin 325.)

Bertrand, Alvin L., and Hitt, Homer L. *Parental Attitudes and Dental Care For Children, A Study in Selected Rural Areas of Louisiana*. Baton Rouge, Louisiana Agricultural Experiment Station, 1948.

A study made in cooperation with the state health department. Attitudes of parents account for some of the difference between children's need for dental care and the amount of care they receive.

Beyer, Glenn H. *Farm Housing in the Northeast, A Survey of Facilities, Activities, Possessions, and Preferences of Families on Owner-Operated Farms*. Ithaca, N. Y.: Cornell University Press, 1949.

Interviews with 607 owner-operators with gross receipts of \$500 or more, at least two family members, and a female homemaker. Adjustments were made for varying sampling fractions, but not for biases arising from taking exactly two interviews per segment. Very detailed.

Beyer, Glenn H. *Housing and Journey to Work*. Ithaca, N. Y., August, 1955. (Cornell University Agricultural Experiment Station.)

Selected 623 houses in Rochester in 1949—22 were vacant, 287 had at least one commuter, 266 had no commuter. The 287 were revisited in 1950 and 217 reinterviewed (some loss because no one now commuting). Commuters are younger, are starting families, have higher income. Noncommuters mostly farmers or operatives. All

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- this in Monroe County (Rochester and vicinity).
- Beyer, Glenn H. *Rural Housing in New York State*. Ithaca, N. Y.: Cornell University Agricultural Experiment Station, October, 1952 (Bulletin 893).
- Interviews with 2070 households in five counties as to housing condition, past and planned repairs or alterations.
- Beyer, Glenn H., Mackesey, Thomas W., and Montgomery, James E. *Houses Are for People*. Ithaca, N. Y.: Cornell University Housing Research Center, 1955 (Research Publication No. 3).
- Data from a field study of 1032 families in the Buffalo area in 1952, relating "values" like "economy," "family," "personal," to attitudes toward housing design, neighborhood, importance of housing.
- Bilkey, Warren J. *"An Analysis of Consumer Expenditure Behavior."* unpublished Ph.D. thesis. Cambridge, Mass.: Harvard University, 1950.
- Reviews the literature and sets forth a formulation of two parts: One, the "delimitation concept," includes the "limiting" factors of biologically based drives, socio-cultural influences, institutional-availability, and "immediate influences." The concept of the consumer as a "going concern" considers: past experiences, commitments and habits, current desires, income and prices, and expectations, goals, and objectives.
- Bilkey, Warren J. "The Basic Relationships in Consumer Expenditure Behavior," *Harvard Studies in Marketing Farm Products*, No. 4-H, 1951.
- A summary of the author's Ph.D. thesis. Also describes a survey employing Lewin's "valence" approach.
- Bilkey, Warren J. "Consistency Test of Psychic Tension Ratings Involved in Consumer Purchasing Behavior," *Journal of Social Psychology*, XLV (1957), 81-91.
- Bilkey, Warren J. "Equality of Income Distribution and Consumption Expenditures," *Review of Economics and Statistics*, XXXVIII February, 1956), 81-87.
- A multiple correlation analysis of time series, concluding that the emulation theory has more empirical support than the comparative propensity-to-consume theory.
- Bilkey, Warren J. "Psychic Tensions and Purchasing Behavior," *Journal of Social Psychology*, XLI (May, 1955), 247-57.
- A report on his Storrs material, with a final remark on the usefulness of economic behavior because you can quantify the dependent variable so nicely.
- Bilkey, Warren J. "A Psychological Approach to Consumer Behavior Analysis," *Journal of Marketing*, XVIII (July, 1953), 18-25.
- Reports a small study of 63 families relating expenditures on durables and food to psychic tensions regarding the items—desire for the item and desire to avoid spending the money—as expressed verbally, and monthly.
- Birmingham, E., Brady, D. E., Hunter, S. M., Grady, J. C., and Kiehl, E. R. *Fatness of Pork in Relation to Consumer Preference*. Missouri Agricultural Experiment Station Research Bulletin 549, 1954.
- Bishop, Myra Leslie. *"Family Savings in the General Economy."* Ph.D. thesis. Ithaca, N.Y.: Cornell University, 1952.
- Black, Guy. "Variations in Prices Paid for Food as Affected by Income Level," *Journal of Farm Economics*, XXXIV (February, 1952), 52-66.

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- Uses data from the 1948 Food Consumption Surveys of the USDA to show how quality as well as quantity changes with income levels.
- Black, Thel R., Frederickson, Carmen D., DeHart, William A., Skidmore, C. Jay, and Carter, Don C. *Impact of Urbanization in Davis County, Utah*. Logan, Utah, August, 1954. Utah State Agricultural College Agricultural Experiment Station, Bulletin 369.)
- Measures on 450 high school sophomores. Two hundred and three of them were selected and their families interviewed, clustered in four communities.
- No relation between degree of family unity and urbanism (17 question scale on former), but unity somewhat lower for more mobile families.
- Blackmore, Beulah. *Clothing Purchased by Farm Families in Tompkins County, New York, 1927-28*. Ithaca, N.Y., June, 1934. (New York Agricultural Experiment Station, Cornell Agricultural Experiment Station Bulletin 615.)
- Blake, James K. "How Much Thinking Before Buying?" *Duns Review and Modern Industry*, LXVI (August, 1955), 38-41.
- A summary of the Katona-Mueller report in *Consumer Behavior*.
- Blankertz, Donald F. "Motivation and Rationalization in Retail Buying," *Public Opinion Quarterly*, XIII (Winter, 1949-1950), 659-68.
- Use of attitude surveys to find why people patronize certain stores may mislead if attitudes result from the patronage. Gives data from a survey (partly by mail) of the credit accounts of one large store in Philadelphia (787 cases).
- Blankertz, D. F., "Shopping Habits and Income," *Journal of Marketing*, XIV (January, 1950), 572-78.
- Blankertz, D. F., Breyer, R. F., and Goodman, C. S., "Campus Shopping Patterns," *Journal of Retailing*, XXX (Summer, 1954), 71ff.
- Blankertz, Donald F., Ferber, Robert, and Wales, Hugh G. *Cases and Problems in Marketing Research*. New York: The Ronald Press Company, 1954.
- Blum, Milton, and Candee, Beatrice. *Family Behavior, Attitudes, and Possessions*. New York: John B. Pierce Foundation, January, 1944. (Research Study 5.)
- A survey of 65 families living in apartment buildings, and 66 families in one-family houses.
- Bond, Floyd A., and others. *Our Needy Aged. A California Study of A National Problem*. New York: Henry Holt and Company, 1954.
- Partly based on a sample of some 890 people in California, aged 65 or over. Most of them had confidently expected to work well beyond the conventional retirement age, and most retirements were involuntary, because of illness, injury, or unemployment.
- Bonnett, Joan L. "Fluctuations of Expenditures for Living with Changes in Incomes of Iowa Farm Business Association Families, 1950-1952." Master's thesis. Ames, Iowa: Iowa State College, 1953.
- Borden, Neil H. *The Economic Effects of Advertising*. Chicago, Ill: Richard D. Irwin, 1947.
- A study sponsored by Advertising Research Foundation. Presents some data on consumer attitudes toward advertising, and some statistical studies of the effectiveness of advertising for specific products. The latter face but never solve the methodological problems of spurious correlations.
- Bott, Elizabeth. "Urban Families: Con-

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jugal Roles and Social Networks," *Human Relations*, VIII (1955), 345-384.

Degree to which families do things jointly (including spend their money) is related to the "connectedness" of their social network, i.e., whether husband and wife have the same friends, and the friends know one another. Connectedness in turn is affected by low mobility, homogeneity of neighborhood, opportunities to help friends or relatives get jobs, all of which are more likely in working classes. Indicates just how complex the problem of decision making in the family is.

Brady, Dorothy. "Family Savings in Relation to Changes in Level and Distribution of Income," in *Studies in Income and Wealth Volume 15*. New York: National Bureau of Economic Research, 1952.

Brady, Dorothy M. "Influence of Age on Spending Patterns," *Monthly Labor Review*, LXXVIII (November, 1956), 1240-44.

Uses data from the Survey of Consumer Finances.

Brady, D. S., and Barber, H. A. "The Pattern of Food Expenditures," *Review of Economics and Statistics*, XXX August, 1948), 198-206.

Relations of expenditures for specific foods to total expenditures, adjusting to a standardized 3.71 person family by an ingenious method.

Brady, Dorothy S., and Rose D. Friedman. "Savings and Income Distribution," in *Studies in Income and Wealth Volume X*. New York: National Bureau of Economic Research, 1947.

Branch, Melville C. *Urban Planning and Public Opinion*. Princeton, N.J.: Princeton University Press, 1942.

A national survey, 2490 cases

"stratified," i.e., quota with 100 cases in each of smaller city sizes in each region.

Attitudes toward home ownership, parking, location, traffic, whether would move if "entirely free to choose," what problems face the city. Should city replace poorest housing, etc. Reasons why like or dislike neighborhood.

"City dwellers" apparently want to live among people whom they consider their own "kind," with the same general interests, standards, and financial status. Conversely, they object to neighbors whom they believe belong to a different "class." The less fortunate are not inured, they are more dissatisfied.

Brandow, G. E., and Allison, H. E. *Competition Between Butter and Margarine in Pittsburgh, June, 1949*. State College, Pa., June 1950. (Pennsylvania Agricultural Experiment Station, Bulletin 528.)

A study of 1296 families.

Branson, Robert D., Jacobs Milton, and Hall, Richard. *Frozen Grapefruit Sections: Evaluating a New Product by Retail Sales Audit and Household Survey*. Washington, D.C.: US Government Printing Office, December, 1955. (US Department of Agriculture, Agricultural Marketing Service, Marketing Research Report 110.)

Interviews with 1837 households in Erie, Pa., four weeks after the end of a promotional campaign to check on awareness of the product and opinions of those who had used it. Also retail sales data.

Brems, Hans, "Long-Run Automobile Demand," *Journal of Marketing*, XX (April, 1956), 379-84.

Bressler, R. G. *City Milk Distribution*. Cambridge, Mass.: Harvard University Press, 1952.

Part V contains a survey of Connecticut milk consumers' attitudes

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about frequency of milk distribution, etc.

Brew, Margaret I., O'Leary, Roxanne R., and Dean, Lucille C. *Family Clothing Inventories and Purchase . . . with An Analysis to Show Factors Affecting Consumption*. Washington, D.C., April, 1946. (US Department of Agriculture, Agricultural Information Bulletin 148.)

A report on survey of clothing inventories and purchases, in three localities and with 923 families. Samples were restricted to families in existence at least a year, white, keeping house, with husband and wife, with no more than two children, and with no other persons in the economic unit. Two of the three localities had further restrictions on the sample. Utilization of clothing was related to income, age, family size, amount and kind of employment and place of residence. Much detail, but no attitudes or preferences asked. Clothing inventories appeared larger than most people assume.

Brinegar, George K. "Short-Run Effects of Income Change on Expenditure," *Journal of Farm Economics*, XXXV (February, 1953), 99-109.

Based on a dissertation, using the wage payments and savings balances for a whole New England community.

Used estimates of wage payments, savings accounts, and sales of ten firms, for 1947, 1948 and half of 1949. Estimates income elasticities for various types of commodities, with and without adjustments for seasonality and price changes. Interesting dynamic patterns of adjustment to income changes are made the basis for broad but unproven conclusions.

Brinegar, George K. "Short-Run Income-Expenditure Relationships." Ph.D.

thesis. Chicago, Ill.: University of Chicago, 1952.

Brinegar, George K., and Johnson, Stewart. *The Market for Fluid Skim Milk*. Storrs, Conn., July, 1953. (University of Connecticut College of Agriculture, Storrs Agricultural Experiment Station, Bulletin 303.)

Reports both time series and cross section market studies, and a controlled market experiment with varying prices. When asked, consumers' estimates of likely purchases at varying prices were much different from their actual purchases. See also Baker and Berry.

Bristol, Ralph B., Jr. "Bibliography of Consumer Behavior," in *Consumer Behavior*, Vol. I: *The Dynamics of Consumer Reaction*, Lincoln Clark, ed. New York: New York University Press, 1954.

Contains a few references to methodological or theoretical articles that were not carried over to the present bibliography. Otherwise references and annotations have been cribbed wholesale from this bibliography.

Bristol, Ralph B. Jr., "Quality Variation and Consumer Behavior." Ph.D. thesis. New Haven: Yale University, 1956.

A study of how consumers change quality as well as quantity as incomes change.

Britt, Stuart Henderson. "The Strategy of Consumer Motivation," *Journal of Marketing*. XIV (April, 1950), pp. 666-74.

Complains that qualitative research has been slighted in favor of quantitative. "We have information on *markets* but not on human beings." A bibliography of 23 items showing potential contributions.

Britton, Virginia. *Food Consumption of 538 Farm and 299 Village Families in Vermont*. Burlington, Vt., June

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1941. (Vermont Agricultural Experiment Station Bulletin 474.)
- Bromberger, Nancy. *Expenditure on Consumer Durable Goods and Disposable Income*. Cambridge, Mass.: Harvard Economic Research Project, February, 1954 (processed).
- A statistical investigation of whether the relation is linear, using various survey data.
- Bronfenbrenner, M., Yamane, T., and Lee, Charles "A Study in Redistribution and Consumption," *Review of Economics and Statistics*, XXXVII (May, 1955), 149-59.
- With references to previous articles on this topic, which make simple behavioral assumptions and are concerned with the empirical facts on consumption at various income levels.
- Brown, Betty J. "Patterns of Distribution of Family Clothing Expenditures As Related to Age Group of Children." Master's thesis. State College, Pa.: Pennsylvania State University, 1954.
- Brown, George H., "Brand Loyalty—Fact or Fiction?" *Advertising Age*, XXIII (June 9, 1952), 53-55; (June 30, 1952), 45-47; (July 14, 1952), 54-56; (July 28, 1952), 46-48; (August 11, 1952), 56-58; (September 1, 1952), 44-48; (September 22, 1952), 80-82; (October 6, 1952), 82-86; December 1, 1952), 76-79; XXIV (January 26, 1953), 75-76.
- Brown, George H. "Measuring Consumer Attitudes Toward Products," *Journal of Marketing*, XIV (April, 1950), 691-98.
- Describes some "exploratory" studies of consumer behavior, seeking the relationships among: availability, consumer knowledge, rating ("preference"), and use, of various brands.
- Brown, J. A. C. "The Consumption of Food in Relation to Household Com- position and Income," *Econometrica*, XXII (October) 1954,, 444-60.
- He estimates a common "within-household-type" income elasticity free from differential household composition effects, then can estimate specific equivalent-adult scales for individual commodities, making use of these income elasticities. See Prais for another method.
- Brown, William F. "The Determination of Factors Influencing Brand Choice," *Journal of Marketing*, XIV (April, 1950), 699-706.
- Cites some of the results of a depth interviewing study designed to uncover the "why's" of consumer preferences among competing brands.
- Brumberg, R. E. "An Approximation to the Aggregate Saving Function," *Economic Journal*, LXVI (March, 1956), 66-72.
- Fits a multiple regression to 1929-1941 data to see how well it predicts 1942-1949. From his dissertation.
- Brumberg, R. E. "Utility Analysis and Aggregate Consumption Functions: An Empirical Test and Its Meaning." Ph.D. thesis. Baltimore, Md.: Johns Hopkins University, 1953.
- Brundage, Roy C., Nicewander, Walter, and Kohls, R. H. *Christmas Trees Purchased by Families in a Middle-Sized City*. Lafayette, Ind., 1955. (Purdue University Agricultural Experiment Station, Station Circular 416.)
- Interviews with 160 people on purchases and preferences.
- Brunk, Max E., and Federer, Walter T., *How Marketing Problems of the Apple Industry Were Attacked and the Research Results Applied*, Ithaca, New York: Cornell University Agricultural Experiment Station, Department of Agricultural Economics, January, 1953. (Methods of Research in

Marketing, Paper No. 4.)

Reports several studies in supermarkets, using highly sophisticated latin square change-over experimental designs.

Burck, Gilbert. "What Makes Women Buy?" *Fortune* (August, 1956), 93ff.

Reports findings from numerous surveys, some of them not generally available elsewhere.

Burck, Gilbert, and Parker, Sanford S. "The Coming Turn in Consumer Credit," *Fortune* (March, 1956), 99-102, 240-47.

Brings together various data, chiefly from the Surveys of Consumer Finances, arguing that recent growth is a "credit binge" and that even a slowing of growth in debt may cause problems. Some descriptive insight into the consumer's reasons.

Burck, Gilbert, and Parker, Sanford S. "The Danger in Mortgage Debt," *Fortune* (April, 1956), 124-27, 249-250.

Brings together various data on mortgage debt and argues that it is growing too rapidly.

Bureau of Applied Social Research, Columbia University. *Brand Motivations in the Purchase of Major Appliances*. New York: Bureau of Applied Social Research, 1950.

A study done for Westinghouse, apparently restricted.

Bureau of Applied Social Research, Columbia University. *Changes in Razor Blade Brands, A Study of Consumer Motivation*. New York: Bureau of Applied Social Research, 1950. Restricted.

Bureau of Applied Social Research, Columbia University. *A Conceptual Analysis of Motivation in Men's Clothing Behavior*. New York: Bureau of Applied Social Research, 1949.

A study done for Barber and Baar Associates, no copies available.

Bureau of Applied Social Research, Col-

umbia University. *The Effects of Oil Progress Week, 1952: A Supplementary Analysis*. New York: Bureau of Applied Social Research, December, 1954.

(Prepared for Oil Industry Information Committee of the American Petroleum Institute). A re-interview analysis on changes in attitudes.

Bureau of Applied Social Research, Columbia University. *An Evaluation of Oil Progress Week*. New York: Bureau of Applied Social Research, February, 1952.

Interviews with 800 people in Bangor, Maine after a week of promotion activity to test its impact.

Bureau of Applied Social Research, Columbia University. *Futures for Radio, An Interpretative Study of Radio Potentials under Television Conditions*. New York: Bureau of Applied Social Research, June, 1955.

A qualitative study of ways people use their radios, and the way they satisfy the need for affiliation without giving the radio their complete attention. Two hundred interviews.

Bureau of Applied Social Research, Columbia University. *On the Flow of Scientific Information in the Medical Profession*, New York: Bureau of Applied Social Research, July, 1955 (processed).

Summary of a study of the Adoption of a New Drug by the Medical Community, prepared for Charles Pfizer and Company.

A study in Illinois with interviews with doctors in four cities, and a check of prescriptions written.

Bureau of Applied Social Research, Columbia University. *On the Flow of Scientific Information in the Medical Profession: A Second Report on a Pre-Test*. New York: Bureau of Ap-

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plied Social Research, August 13, 1954 (processed).

A study done for Charles Pfizer and Company.

Bureau of Applied Social Research, Columbia University. *The Role of Quick Magazine in the Lives of Syracuse Subscribers*. New York: Bureau of Applied Social Research, July, 1952 (processed).

Interviews with 111 subscribers as to how they happened to subscribe, reading habits, etc. Availability uncertain.

Bureau of Applied Social Research, Columbia University. *The Social Psychology of Installment Buying, An Exploratory Study, with Special Reference to Automobile Financing*. New York: Bureau of Applied Social Research, 1949.

Conducted for the Universal CIT Credit Corporation now CIT Financial Corporation. One hundred three interviews, intensively analyzed with emphasis on social class pressure and upward mobility.

Bureau of Applied Social Research, Columbia University, *Social Stereotypes of Automobile Makes*, prepared for Special Products Division, Ford Motor Company, Report #1, presumably restricted, June, 1956.

Characterizes cars by their perceived appropriateness for people of one age, sex, social class, and urban-rural residence.

Bureau of Applied Social Research, Columbia University. *They Changed to Tea, A Study in the Dynamics of Consumer Behavior*. New York: Bureau of Applied Social Research, December, 1954 (processed).

Prepared for the Tea Council. From a Pulse sample of 6565 households in the New York metropolitan area, 282 who had changed to tea were interviewed as to background and what drove them away

from coffee and led them to tea.

Burk, Marguerite C. "Changes in the Demand for Food from 1941 to 1950," *Journal of Farm Economics*, XXXIII (March, 1951), 281-98.

Burk, Marguerite C., "The National Food Survey of the United Kingdom and Comparisons with Other British and American Food Data," *Agricultural Economics Research*, IX (July, 1957), 73-87.

Gives references to basic reports, which have data yearly from 1941 on, based on probability samples of people induced to keep records.

Burnett, Lela, "A Study of the Practices of a Selected Group of Women in Purchasing and Wearing Millinery." Master's thesis. Philadelphia, Pa.: Drexel Institute of Technology, 1954.

Burns, Robert K. "Economic Aspects of Aging and Retirement," *American Journal of Sociology*, LIX (January, 1954), 384-90.

Cites some Social Security Board data on willingness to retire.

Burril, Lida M., and Beth Alsop. *Food Habits of South Dakota Women*. Brookings, S.D., May, 1955. (South Dakota State College Agricultural Experiment Station Bulletin 451.)

Part of a study in eight north central states of nutritional status of women over 30. Samples (somewhat biased) of 339 women. 24 hour recall period. Habits were affected by place of residence and age. Large proportion had inadequate diets by NRC standards.

Burstein, Meyer L., "The Demand for Refrigerators in the United States," paper presented at the Econometric Society Meetings, Cleveland, October, 1956. Abstract in *Econometrica*, October, 1957.

Business Week. "Motivations, Why People Buy; Why They Work; How to Deal with Them," *Business Week* (August 14, 21, and 28, 1954), re-

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printed and available for 50¢.

Three reports summarizing current research programs.

Butters, J. Keith. "Taxation, Incentives, and Financial Capacity," *American Economic Review*, XLIV (May, 1954), 504-19.

Reprinted in *American Economic Association Readings in Fiscal Policy*. Vol. VII, Smithies and Butters, eds. (Homewood, Ill.: Richard D. Irwin, Inc., 1955).

Bylund, N. Bruce, and Baker, Ralph L., "Consumer Survey versus Store Data for Determining Egg Consumption," *Journal of Farm Economics*, XXXIX (August, 1957), 770-77.

Consumer surveys before and after a campaign. They bought more but mostly from non-store sources.

Bylund, N. Bruce, "Selected Social and Psychological Factors Associated with Levels of Egg Consumption," Ph.D. thesis. State College, Pennsylvania: Pennsylvania State University, 1954.

California University, Institute of Industrial Relations. *Human Attitudes, How They Develop and Change, A Seminar on Human Relations*. San Bernardino, Calif.: United Steelworkers of America and the University of California, Los Angeles, January 27-30, 1954.

Speeches by Ralph L. Beals, Carl R. Rogers, Hubert S. Coffey, and Robert J. Blakely, summarizing for laymen something of attitude change.

Canada, Dominion Bureau of Statistics and Department of National Health and Welfare. *Canadian Sickness Survey* (9 parts). Ottawa, Can.: Edmund Clothier, Queen's Printer, 1956.

A survey by public health nurses of 10,000 households, 14 monthly visits to each. Parts 2 and 9 give data on expenditures and amount

of health care by age, sex, and income jointly.

Canada, Province of Saskatchewan, Department of Public Health. *Annual Report of the Saskatchewan Hospital Services Plan*. Regina, Can.: Thomas N. McConica, Kings Printer, annual.

Revealing data on trends over time in utilization, under a universal prepaid hospitalization scheme.

Canadian Daily Newspapers Association. *Fifth Canadian Consumer Survey*. Toronto, Can.: Canadian Daily Newspapers Association, 1953.

A study done by Sanders Marketing Research, Toronto, using newsboys to deliver and pick up questionnaires. Half of the questions were asked of 20,000, the other half of another 20,000. Information on brand preferences. Previous studies done in odd-numbered years. A Sixth Survey published in the fall of 1956.

Canon, Helen. *The Family Finances of 195 Farm Families in Tompkins County, New York, 1927-28*. Ithaca, N.Y.; May, 1931. (Cornell Agricultural Experiment Station Bulletin 522.)

Caplow, Theodore, and Raymond, John J. "Factors Influencing the Selection of Pharmaceutical Products," *Journal of Marketing*, XIX (July, 1954), 18-23.

Interviews with 182 physicians in eight midwestern states in the summer of 1953, on the adoption and use of various drugs, and the influence of advertising media, reputation of the drug house, etc.

Carroll, J. Douglas. *Urban Land Vacancy: A Study of Factors Affecting Residential Building on Improved Lots in Flint, Michigan*. Ann Arbor, Mich.: Social Science Research Project, University of Michigan Press, November, 1952.

A study of the way people hold

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- ownership in empty lots trying vainly to get back their investment plus interest.
- Carter, C. W., Beanblossom, F. Z., and Halpin, R. B. *Consumer Preference of Eggs*. College Station, Texas, July 11, 1946. (Texas Agricultural Experiment Station Progress Report 1022.)
- Cartwright, Philip W., *Survey of Income, Expenditures and Savings Patterns, State of Washington, 1948*, Seattle: University of Washington Press for the Institute of Labor Economics, 1950.
- Caudle, Anne H. "A Study of Some Buying Practices of One Hundred Women Shopping for Cotton Yard Goods in Opelika and Auburn." Master's thesis. Auburn, Ala.: Alabama Polytechnic Institute, 1954.
- Centers, Richard. *The Psychology of Social Classes*. Princeton, N. J.: Princeton University Press, 1949.
- Chamley, E. "Expenditures on Food in Large French Towns by Socio-Occupational Groups," *Economie Appliquée*, VII (October-December, 1954), 563-79.
- A 1951 study of urban households reveals rather small variations.
- Cherne, Leo. "Harry A. Bullis, Portrait of 'New Businessman,'" *Saturday Review of Literature* (January 23, 1954), 24-26.
- Five hundred business and labor leaders were asked, "Do you favor further lowering of our tariffs?" Results: 60-21 yes to no. Sample was asked with added: "despite the possibility of injury to the particular American industries involved," then only 44 to 35 were for lowering.
- Chernick, Jack, *Economic Effects of Steady Employment and Earnings: A Case of the Annual Wage System of George A. Hormel and Company*, Minneapolis: University of Minnesota Press, 1952.
- They used installment credit more.
- Cheskin, Louis, and L. B. Ward. "Indirect Approach to Market Reactions," *Harvard Business Review*, XXVI (September, 1948), 572-80.
- Cites some evidence that direct questions may give incorrect information. Some comments on regularities in color preferences.
- The Chicago Sun Times. *Chicago Sun Times Pantry Poll*. Chicago, Ill., 1948. (*The Chicago Sun Times Special Bulletin* 9.)
- Chicago Tribune. *Automobiles—What They Mean to Americans*. Chicago, Ill.: The Chicago Tribune, September, 1953.
- This is a companion study to the Tribune's earlier motivation analyses of beer drinking and cigarette smoking.
- Study by Social Research, Inc.
- Chicago Tribune. *Cigarettes: Their Role and Function*. Chicago: The Chicago Tribune, no date.
- This pamphlet summarizes the results of a study undertaken to explore basic motivations that prompt people to smoke cigarettes. The study used modifications of the Thematic Apperception Test, sentence completion, and role-playing. Study was by the Social Research, Inc.
- Chicago Tribune. *Consumer Attitudes Toward Beer and Beer Advertising*. Chicago: The Chicago Tribune, no date.
- The motivation for beer drinking is discussed with reference to social class, and "do's" and "don't's" of beer advertising are itemized. The study is based on depth interviews in the Chicago market. Study was by the Social Research, Inc.
- Chow, Gregory C. "Demand for Automobiles in the US, a Case Study in Consumer Durables." Ph.D. thesis.

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Chicago, Ill.: University of Chicago, September, 1955.

Extensive use of multiple correlations to select between alternative hypotheses.

Church, Donald E. "The Consumer Market for Canned Vegetables, Fruits, and Juices," *The Journal of Marketing*, XI (July, 1946), 44-54.

A study of shares of total canned goods sales, based on 1015 families who reported to the OPA every week for 10 weeks, in the winter of 1945 as part of the OPA wartime food diary. No dynamic analysis.

Citizen's Housing Council of New York, "Why Do Tenants Move?" New York: The Council, October, 1940. (Mimeo)

A study of the moving habits and attitudes of 1219 New York families, supervised by Zelma Ploscowe, indicated many of them moving to get lower rent in the winter of 1938-39. Dissatisfactions with services and repairs were stronger than dissatisfactions with landlord personally.

Clark, Colin. *The Conditions of Economic Progress*. London: The Macmillan Co., 1940.

Computes income elasticities for several countries using budget studies.

Clark, Faith. "A Comparison of the Relationships Between Income and Meat Consumption in 1942 and 1948, Urban Families in the United States." Doctoral thesis. Chicago, Ill.: University of Chicago, 1952.

Clark, F., and Fincher, L. J. *Nutritive Content of Homemakers' Meals, Four Cities, Winter, 1948*. Washington, DC: US Government Printing Office, 1954. (US Department of Agriculture, Agriculture Information Bulletin 112.)

Clark, Faith, and Le Bovit, Corine B.

Food Consumption of Farm Families, Meeker and Wright Counties, Minnesota, 1950. Washington, DC: US Government Printing Office, January, 1955. (US Department of Agriculture, Agriculture Information Bulletin 127.)

Food consumption and nutrition content, by income levels. A study of 235 farm operator families, compared with Minneapolis and St. Paul families studied in the previous two years.

Clark, Faith, Murray, Janet, Weiss, Gertrude S., and Grossman, Evelyn. *Food Consumption of Urban Families in the United States . . . with an Appraisal of Methods of Analysis*. Washington, DC: US Government Printing Office, October, 1954. (US Department of Agriculture, Agricultural Research Service, Agriculture Information Bulletin 132.)

Data from surveys in 1948-1949 with 4500 families, and comparisons with data from a 1942 survey. The 4500 include a national sample of 1558, surveys with 1066 housekeeping families in four cities, and seasonal surveys with 1885 in the same four cities. Ninety-six tables, and comments on methodological problems.

Clarke, Alfred C. "The Use of Leisure and Its Relation to Levels of Occupational Prestige," *American Sociological Review*, XXI (June, 1956), 301-7.

A mail questionnaire returned by 574 people in Columbus, Ohio. Uses of leisure were related to prestige level of occupation as scaled by other studies. Summary of a dissertation.

Clements, F. "The Consumer Panel Approach to Demand Analysis," *New England Research Council Marketing and Food Supply Proceedings* 1955, 28-36.

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- Clements, Forrest, and Meyers, Trienah. "How They Tell What We Want," in *The Yearbook of Agriculture*. Washington, DC: US Government Printing Office, 1954.
- Clinard, Marshall B. *The Black Market, A Study of White Collar Crime*. New York: Rinehart & Company, 1952.
- A story of OPA violations and motivations for violations.
- Clover, Vernon T. "Relative Importance of Impulse-Buying in Retail Stores," *Journal of Marketing*, XV (1950), 66-69.
- Describes a situation in which all the stores in a town were shut down. Following-week sales were compared with "normal" weeks to see how much of the lost volume was "made up." Book and variety stores showed greatest effect of impulse buying, department stores and beauty shops, least.
- Cochrane, W. W. "Family Budgets—A Moving Picture," *Review of Economics and Statistics*, XXIX (August, 1947), 189-98.
- Cohen, Morris, "Consumers' Durables: A Long Look at the Postwar Boom," *The Conference Board Business Record*, XL (November, 1954), 432-441.
- Cohen, Morris. "Liquid Assets and the Consumption Function," *Review of Economics and Statistics*, XXXVI (May, 1954), 202-21.
- Raises questions about the effect because of the concentration of assets and the different effects of historical events.
- Coit, Elizabeth. "Housing from the Tenant's Viewpoint," *Architectural Record* (April, 1942), 71-84.
- A study of 120 housing projects.
- Cole, Robert H., ed. *Consumer Behavior—Motivation*, 1955 *Marketing Symposium*. Urbana, Ill.: University of Illinois, October, 1955.
- A series of talks, only the one by Likert presenting data.
- Coleman, James, Katz, Elihu, and Menzel, Herbert, "The Diffusion of an Innovation Among Physicians," *Sociometry*, December, 1950, pp. 253-270.
- A study of the pattern of acceptance of a new drug by physicians, included here because the same factors might affect consumer acceptance of new products.
- Coleman, Jettie Laura. "Clothing Buying Habits of Professional Women and Housewives." Master's thesis. Prairie View, Texas: Prairie View A and M College, 1950.
- Coles, J. V. "Packaged and Bulk Spinach and Tomatoes: Quality, Price, Availability and Consumers' Reaction," *Journal of Home Economics*, XLVI (May, 1954), 320-24.
- Coles, J. V. "Seasonal Use of Dairy Products, Studies of Sacramento Families Showed How Uses of Dairy Products Varied with Season," *California Agriculture*, VIII (1954), 14-15.
- Collins, Selwyn D. "Frequency of Health Examinations in 9,000 Families Based on Nation-Wide Periodic Canvasses, 1928-1931," *Public Health Reports*, XLIX (March 9, 1934), 321-46.
- 8758 white families were visited at intervals of 2 to 4 months over a twelve-month period. One of many such receipt of service studies which throws some tangential light on consumer demand for medical services.
- Comish, N. H. "Why Consumers Change Brands," *Dun's Review* (March, 1953), 29.
- 3700 women were asked why they had changed brands. Dissatisfaction with low quality of present brand was far and away the most

- frequent answer, with price and advertising second and third.
- Community Studies, Inc. *An Opinion Survey of Kansas City's Women Shoppers*. Kansas City, Mo.: Community Studies, Inc., 1954.
- Most of them use public transportation, don't work downtown.
- Community Studies, Inc. *Downtown Transportation Survey*. Kansas City, Mo.: Community Studies, Inc., 1953.
- A survey on means of transportation used by shoppers, interviewing customers of twelve cooperating stores.
- Conrad, Alfred H. "The Multiplier Effects of Redistributive Public Budgets," *Review of Economics and Statistics*, XXXVII (May, 1955), 160-73.
- Consumer Survey Statistics. *Report of Consultant Committee on Consumer Survey Statistics, Organized by the Board of Governors of the Federal Reserve System at the Request of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report*. Washington, DC: Board of Governors of the Federal Reserve System, July, 1955.
- A detailed study and evaluation of the Surveys of Consumer Finances.
- Converse, Paul D. *Consumer Buying Habits in Selected South Central Illinois Communities*. Urbana, Ill.: University of Illinois, 1948. (University of Illinois Business Studies 6.)
- Converse, Paul D., and Crawford, Merle. "Buying Habits in the Home," *Advertising Agency* (February, 1950), 46-47, 144-50.
- Information on who did the buying and who had the most influence in purchasing each of 19 items, as reported by marketing students for their parental families. Data for 1949 from seven universities compared with 1930 data from Illinois. Reports women do more buying than they have influence, and that there has been an increase in shopping together.
- Converse, P. D., and Crawford, C. M. "Family Buying: Who Does It? Who Influences it?" *Current Economic Comment*, XI (November, 1949), 38-50.
- Cook, Hugh L., and Hussemann, Dorothy L. *Consumer Acceptance of Dry Milks in Quantity Cookery*. Madison, Wis., January, 1950. (University of Wisconsin Agricultural Experiment Station Research Bulletin 164.)
- Change in taste panel's acceptance as proportion of dry milk solids was increased. OK up to 10% additional. Also preference tests in an industrial cafeteria.
- Corbett, R. B. *A Study of Consumers' Preferences and Practices in Buying and Using Eggs*. Kingston, R. I., 1953. (Rhode Island Agricultural Experiment Station Bulletin 240.)
- Correll, Myrtle G. "Farm Incomes and Living Costs for Certain Kansas Farm Families, 1934-1950," *Journal of Home Economics*, XLVI (March, 1954), 171-75.
- A "panel" study with some turnover in the panel.
- Correll, Myrtle G. *Farm Income and Living Costs for Certain Kansas Farm Families, 1946-1950*. Manhattan, Kans., February, 1954. (Kansas State College Agricultural Experiment Station Bulletin 363.)
- Data from 503 cooperating farm families, members of Farm and Home Management Associations, who kept records for one or more of the five years. See two previous bulletins by Myrtle Gunselman.
- Correll, Myrtle G. *Farm Incomes and Living Costs for 278 Kansas Farm and Home Management Association Families, 1952*. Manhattan, Kan., June, 1953. (Kansas Agricultural Ex-

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- periment Station, Preliminary Report, Mimeographed Report of Progress, 11.)
- Cotton, Walter P. *Consumption of Dairy Products in Rural North Carolina*. Raleigh, N. C., October, 1950. North Carolina Agricultural Experiment Station Bulletin 372.)
- A study of 390 rural families showed that they consume four times as much fluid milk as urban families.
- Cotton, Walter P. *Consumption of Dairy Products in Urban North Carolina*. Raleigh, N. C., August, 1950. (North Carolina Agricultural Experiment Station Bulletin 371.)
- A stratified sample of 1023, relating purchase to income, race, age, education, etc.
- Cowles, May L., and Irwin, M. H. *Factors Affecting Farm Housing in the North Central Region*. Madison, Wis.: University of Wisconsin Agricultural Experiment Station, Bulletin 499, 1953. (Also North Central Regional Publication 33.)
- Cowles, May L., Sick, Mildred M., and Myers, Jean F. *Where the Money Went, Changes in Family Living from 1940 to 1942 in 106 FSA Families in Wisconsin*. Madison, Wis., September, 1945. (University of Wisconsin Agricultural Experiment Station Research Bulletin 155.)
- Included only those who kept account books, and a rather unusual period (also expanding living costs).
- Cox, Rex W. *Competition Between Butter and Margarine*, Minneapolis, 1952. Minneapolis, Minn., June, 1953. (University of Minnesota Agricultural Experiment Station Bulletin 417.)
- Data on 1179 families' consumption and preferences, related to income, nationality, and size of family. Memory data on previous consumption was secured from 780 families that started housekeeping before World War II. Consumers were more aware of the price of butter than of the differential.
- Crandall, E. W. "The Family Manages Its Money," *Journal of Home Economics*, XL (1948), 565-66.
- Crawford, Charles M. *An Analysis of Sales Forecasting Policies, Procedures, and Techniques*. Ph.D. thesis. Urbana, Ill.: University of Illinois, 1954.
- Crawford, Mary M., Steinkamp, Stanley, and Hauswald, Edward L. *Student Spending at Indiana University 1951-52*. Bloomington, Ind., November, 1955. (Division of Research and Field Services, Indiana University, Bulletin of the School of Education, Indiana University Vol. 31, No. 6.)
- Personal interviews with 678 students (91-97% response rate), and comparisons with a study in 1940-1941 by M. M. Crawford.
- Cressey, Donald R. *Other People's Money, A Study in the Social Psychology of Embezzlement*. Glencoe, Ill.: The Free Press, 1953.
- A study of 133 people who violated a financial trust they had originally accepted in good faith.
- Cron, L. E., Burdette, R. F., and DeVault, S. H. *Economic Analysis of the Baltimore Egg Market*. College Park, Md., 1939. (Agricultural Experiment Station Bulletin 430.)
- Crossley Inc. "The Forum, Study of the House Market," *Architectural Forum*, LXXXIII (September, 1945), 1-27.
- Crowell-Collier Research Department. *The American Magazine Travelogue, Number Eight*. New York: Crowell-Collier Publishing Company, 1955.
- 2078 mail questionnaires representing a 60% return from a mailing to a sample of *American Magazine* subscribers. Some trend data show-

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ing increased length of vacations since 1948 and more use of car and airplane. Both men and women give themselves more credit for the decision, the net result being a "practically even division of influence between men and women." Other data are difficult to interpret since they refer only to a highly selected group of subscribers.

Crowell-Collier Research Department.
Appliances in Companion Homes, 1954; Laundry Equipment. New York: Crowell-Collier Publishing Company.

Mail questionnaire to a random sample of *Companion* subscribers. Seventy-five percent response rate gave 2236 replies. Ownership, preferences, buying plans, and influences on recent purchases. Women more likely to have initiated and selected brand of washing machine, but men were almost as frequently mentioned as women in initiating the idea of a dryer.

Crowell-Collier Research Department.
Canned Foods in the Home. New York: Crowell-Collier Publishing Company, 1954.

Uses and opinions of canned vegetables, canned fruits, and canned juices by urban housewives.

Interviews with 2500 housewives in 68 communities. A quota sample with geographic controls, weighted to compensate for underrepresentation of low income groups.

Data on use of canned foods by age, income, area, plus some expressed reasons for preferences.

Crowell-Collier Research Department.
Cigarette Smoking by US Heads of Families. New York: Crowell-Collier Publishing Company, 1955.

A personal interview study among 1916 males and 2106 females totaling 4022 heads of families.

Conducted by *American Magazine*. Brand loyalties and smoking habits, and an interesting finding that both sexes tend to feel more often than true that they buy the cigarettes for both parties.

Crowell-Collier Research Department.
Collier's Families Report Their Housing Plans for Tomorrow. New York: Crowell-Collier Publishing Company, June, 1946.

A survey of 1837 *Collier's* subscriber families.

Crowell-Collier Research Department.
Colliers Housing Quiz. New York: Crowell-Collier Publishing Company, January, 1949.

A survey of 16,212 *Collier's* subscriber families.

Crowell-Collier Research Department.
Crowell-Collier Automotive Survey Number 19, 1955. New York: Crowell-Collier Publishing Company, 1955.

Nineteenth in a series of surveys, this one conducted by W. R. Simmons and Associates during May and June, 1955.

Stratified probability sample yielded 4165 interviews. One call-back plus weighting to take care of not-at-homes. Data on ownership, buying plans, servicing, tire purchases, car brand loyalty (plans to buy same versus other make than now owns). Would be much more useful with trends retained, but remarkably close agreement between purchase plans and subsequent new-car registrations.

Crowell-Collier Research Department.
Crowell-Collier Third Annual Tire Survey. New York: The Crowell-Collier Publishing Company, 1948.

Also the same year a second food and grocery survey, and a women's clothing survey.

Crowell-Collier Research Department.
Homemaking and Appliances, A Psy-

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- chological Study*. New York: Crowell-Collier Publishing Company, 1945.
- Crowell-Collier Research Department. *Houses*. New York: Crowell-Collier Publishing Company, May, 1946.
- A survey of 1935 *Woman's Home Companion* subscriber families.
- Crowell-Collier Research Department. *Housing Plans of Families*. New York: Crowell-Collier Publishing Company, June, 1946.
- A survey of 1970 *American Magazine* subscriber families.
- Crowell-Collier Research Department. *Self Medication for Seven Common Ailments*. New York: Crowell-Collier Publishing Company, 1955.
- A personal interview survey among 1893 heads of families, 895 males, 988 females, during the first week in August, 1955. 50 sample points but details of sample not given. Less self-medication by people over 65, except for constipation remedies.
- Cunningham, Ross M. "Brand Loyalty—What, Where, How Much?" *Harvard Business Review*, XXXIV (January—February, 1956), 116–28.
- Data from the *Chicago Tribune's* consumer purchase panel in metropolitan Chicago for 1950–1952 on seven products, over 600 families each year. Brand loyalty as measured by proportion of total purchases represented by most favored brand, is found fairly high, but not consistently high for different products by the same family, and not related to socioeconomic factors, store loyalty, or size of purchase. (See also NBC study.)
- Curtis Publishing Company. *New Families—New Markets, 1940–1950*. Philadelphia: Curtis Publishing Company, 1947.
- Cutler, Virginia F. *Personal and Family Values in the Choice of a Home*. Ithaca, N.Y.: Cornell University, 1947. (Cornell University Bulletin 840.)
- Survey covered 165 families.
- Dahle, Thomas L., *Michigan State Park Users Survey, 1956*, East Lansing, Mich.: Bureau of Business Research, College of Business and Public Service, Michigan State University. (Research Report Number 19.)
- Darden, Gladys L. "Some Equipment Consumption Patterns." Master's thesis. Lafayette, Ind.: Purdue University, 1949.
- Darley, J., Gross, N., and Martin, W. "Studies of Group Behavior: Factors Associated With the Productivity of Groups," *Journal of Abnormal and Social Psychology*, XXXVI (1952), 396–403.
- One of few studies of "traditioned" rather than *ad hoc* groups. These were residents of women's coöperative housing units at Minnesota.
- Dashiell, J. F. "Experimental Studies of the Influence of Social Situations on the Behavior of Individual Human Adults," in *Handbook of Social Psychology*, C. Murchison, ed. Worcester, Mass.: Clark University Press, 1935.
- A review article.
- Davidson, Donald, and Suppes, Patrick. *Experimental Measurement of Utility by Use of a Linear Programming Model*. Stanford, Calif., April 2, 1956. (Stanford University Applied Mathematics and Statistics Laboratory, Technical Report 3.)
- A method that allows a numerical utility function to be computed and tests actual choices against predicted ones, allowing for threshold effects. Problems in securing transitivity of preferences derived from paired comparisons.
- Davidson, Donald, Siegel, Sidney, and Suppes, Patrick. *Some Experiments and Related Theory on the Measure-*

ment of Utility and Subjective Probability. Stanford, Calif., August, 1955. (Stanford University Value Theory Project and Department of Philosophy, Report 4.)

Measures utility using a single chance event with a subjective probability experimentally determined. So don't have to assume subjective—objective probabilities. Several improvements of other sorts over the Mosteller-Nogee experiments. People seemed to tend to try to maximize expected utility.

Davies, J. C. "Some Relations Between Events and Attitudes," *The American Political Science Review*, (September, 1952), 777-89.

A study of the effects of the break in commodity prices on consumer attitudes and expectations, using data from a Survey Research Center study that straddled the break.

Davis, Marjorie. "Aspects of Family Behavior in Relation to Health and Medical Care in a Low-Income, Urban Neighborhood." Ph.D. dissertation. New York: New York University, 1955.

Deacon, Ruth E. "A Study of the Expenditures of Nine Families Over A Period of Years." Ph.D. thesis. Ithaca, N.Y.: Cornell University, 1955.

Author found that furniture and equipment expenditures were most responsive to large income decreases and increases. Food responded readily to income increases but resisted income decreases.

de Janosi, Peter E. "Factors Influencing The Demand for Automobiles: A Cross-Section Analysis." Ph.D. dissertation. Ann Arbor, Mich.: University of Michigan, 1956.

A complex analysis of automobile purchases using data from the Surveys of Consumer Finances. Explanatory factors that proved signif-

icant included both factual and attitudinal ones.

de Janosi, Peter E. "Factors Influencing the Demand for New Automobiles: A Cross-Section Analysis," Paper at September, 1956 Econometric Meetings, Detroit. Abstract in *Econometrica*, XXV (April, 1957), 364-65.

Summary of dissertation findings.

Denham, C. B. "Influence of the Consumer," *American Egg and Poultry Review Magazine*, X (1949), 23-24. Detroit Area Study, University of Michigan. A *Social Profile of Detroit*, 1955. Ann Arbor, Mich.: Detroit Area Study, Survey Research Center, University of Michigan, 1956.

The fourth of a series of general reports, this one with data on sources of income, television ownership, and "helping and being helped by relatives."

Detroit Free Press, *Motivation Research Looks at Detroit Newspaper Readers*. Detroit, no date (1956).

A study by Social Research, Inc. (Burleigh Gardner).

Dichter, Ernest. "A Psychological Study of the Hospital-Patient Relationship," *Modern Hospital*, September, October, November, December, 1954 and January and February, 1955 (reprinted).

"Five different research methods and five different types of control groups," 160 respondents. Basic problem was the patients' insecurity and need for assurance. Relationship of hospital administration to attitudes of staff and patients.

Dichter, Ernest. "A Psychological View of Advertising Effectiveness," *Journal of Marketing*, XIV (July, 1949), 61-66.

The author briefly discusses techniques for assessing the effect which advertising copy has on the reader at the level of feeling, ego-

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involvement, and motive gratification.

Dichter, Ernest. "Finding Psychological Hooks to Meet Problems," *Western Advertising* (June, 1953).

General points, with "findings" from various studies as illustrations.

Dichter, Ernest. "Health Insurance Starts in the Heart," *The Spectator* (September, 1954).

A literary report of a "survey of attitudes on health insurance."

Dichter, Ernest. "Psychology in Market Research," *Harvard Business Review*, XXV (Summer, 1947), 432-43.

The writer deals with consumer motivation, the customer's inner needs, multiple motivation, and rationalization vs. real motivations.

Dichter, Ernest. "Radio and Television Audience Research," *Handbook of Applied Psychology*, D. H. Fryer and E. R. Henry, eds. New York: Rinehart and Company, Inc., 1950, pp. 375-80.

The article concerns itself with what happens in peoples' minds and to their feelings as they listen or look, and suggests ways in which motivation research can help produce more effective programs.

Dichter, Ernest. "These are the Real Reasons People Buy," *Advertising & Selling*, XLI (July, 1948), 33.

Discusses the results obtained by various techniques (depth interviewing, role-playing, sociometric maps) in ascertaining the "real" reasons behind consumer purchases of brands.

Dichter, Ernest. "What Are the Real Reasons People Buy Today?" *Sales Management*, February 1 and February 15, 1955.

Qualitative insights into consumer motives.

Dichter, Ernest. *What Packaging Really Means*. Chicago: Paraffined Carton Research Council, no date.

Packaging is found to have three major functions—to symbolize considerateness, facilitate choice, and arouse emotions.

Dickins, Dorothy. *The Home-Produced Food Supply of Non-Owner Farm Families, Some Factors Associated With It*. State College, Miss., March, 1954. (Mississippi State College Agricultural Experiment Station Bulletin 512.)

A study in two counties of 443 white and Negro tenant families with two or more members and in existence one year or longer. Two groups, those with less than \$75 per person per year in home-produced food and those with \$75 or more, are compared. Higher value of home-produced food was associated with higher income, form of tenancy, race, schooling of head and wife, size of family (negatively), and participation of head in home food production. Sample drawn by BAE, no further detail on it.

Dickins, D. "The Rural Family and Its Source of Income," State College, Miss., 1951. (Mississippi Experiment Station Bulletin 481.)

Dickins, Dorothy, and Fanelli, A. Alexander. "Practices and Preferences in Consumption of Sweet Milk and 'Competing' Beverages," *Journal of Home Economics*, XLVIII (February, 1956), 114-18.

Interviews with 405 homemakers in three areas of Mississippi. Report on part of a larger study of buying of dairy products. Asked about "usual" and "preferred" drink, for each meal.

Dickins, Dorothy, Fanelli, A. Alexander, and Ferguson, Virginia. *Attitudes of Rural School Children Towards Several Food Production and Canning Activities*. State College, Miss., May, 1954. (Mississippi State College

Agricultural Experiment Station Bulletin 519.)

Seven photographs were shown to 13-16 year old school children, photographs of children of the same age, sex, and race doing various home food production activities, some alone and some with the family. They were asked how they thought the child in the picture felt, and why, and how they would feel, and why. Sample included 400 children in the 7th, 8th, and 9th grades stratified by race, sex, and county seat versus county school. An additional sample of retarded children was added. Responses showed a general liking for tasks, particularly those appropriate to their sex and those they were accustomed to doing. Considerable differences between statements about how they thought the person in the picture felt and how they felt, this plus reasons indicating they picked up clues from the photographs, i.e., facial expressions.

Dickins, Dorothy, Fanelli, A. Alexander, and Ferguson, Virginia. "Attractive Menu Items," *Journal of the American Dietetic Association*, XXX (September, 1954), 881-85.

Report on preferences between two menus of 884 white and Negro adults, and 680 school children in two rural counties of Mississippi. Author concludes that sometimes a menu was preferred because it had a number of liked items, sometimes because it had one item with a great deal of "pulling power."

Dinitz, Simon. *Insurance Consumption Patterns in Four Areas*. Columbus, Ohio: Research Department, Nationwide Insurance Companies, September, 1955.

(Nationwide was formerly called Farm Bureau Mutual Auto Insurance Company.) Combination of studies done by different people in

New Haven, Columbus, and in rural areas of Vermont and Ohio. Samples of policyholders in Farm Bureau Mutual, with a low response rate among them. Relates coverage to education, occupation, income, age. All were related except age. Holdings of other types of insurance than life: auto, fire, medical. Vermont rural sample was a sample of farmers, but Ohio rural sample was reply (40%) to a mailing to Advisory Council leaders of Family Forum Groups of the Ohio Farm Bureau Federation. N's were 151 for New Haven, 102 for Columbus, 220 for rural Vermont and 455 rural Ohio families. Also some data on medical expenditures. Only urban rural comparisons and east-midwest differences are meaningful, if these are, because of special nature of the samples.

Dobson, Gordon J. "Preferences and Practices of Upper Arlington Consumers in Buying Eggs and Poultry." Unpublished master's thesis, 1949. Copy on file at the Ohio State University library.

Dominick, Bennett A., Jr., *An Illustration of the Use of the Latin Square in Measuring the Effectiveness of Retail Merchandising Practices*, Ithaca, New York: Cornell University Agricultural Experiment Station, Department of Agricultural Economics, June, 1952. (Methods of Research Marketing, Paper Number 2.)

Latin square experimental design applied to methods of selling apples in supermarkets.

Dourdin, Jacques, *Etude du marche de la parfumerie*, Paris: Dourdin, 1949, 157p.

Dourdin, Jacques, *Etude du marche des articles de laine*, Bruxelles: Secretariate international de la laine, 1950, 137p.

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- Due, Jean Mann. "Consumer Knowledge of Installment Credit Charges," *Journal of Marketing*, XX (October, 1955), 162-66.
A study of 311 families in Champaign-Urbana showing that most of them didn't know the charges for credit.
- Due, Jean Mann. *Consumption Levels in Canada and the US, 1947-1950*. Ph.D. thesis. Urbana, Ill.: University of Illinois, 1953.
Summarized under the same title in *Canadian Journal of Economics and Political Science*, XXI (May, 1955), 174-81.
- Duesenberry, James S. *Income, Savings, and the Theory of Consumer Demand*. Cambridge, Mass.: Harvard University Press, 1949.
One of the first to suggest a ratchet effect of income changes on consumption expenditures, as well as the influence of position in the income distribution.
- Duesenberry, James S., and Kistin, Helen. "The Role of Demand in the Economic Structure," in *Studies in the Structure of the American Economy*, New York: Oxford University Press, 1953.
Basically concerned with measurement rather than hypothesis testing, and uses a limited number of available variables in an ingenious way.
- Dufour, Francis-Antonin, *Un Enquête sur la Consommation à Marseille*, Marseille, France: Chamber de Commerce de Marseille, 1953.
A study of purchases and some attitudes about them based on a probability sample of 1014 households.
- Dukes, William F. "Psychological Studies of Values," *Psychological Bulletin*, LI (January, 1955), 24-50.
A review article of psychological studies on acquisition of values (attitudes with affects).
- Duncan, O. D. *Factors Related to Levels of Living in Oklahoma Farm Families*. Stillwater, Okla., 1954. (Oklahoma Agricultural Experiment Station, Bulletin B-429.)
- Dunsing, Marilyn M. "The Effect of Changes in Family Income on Family Expenditures." Doctoral dissertation. Chicago, Ill.: University of Chicago, 1954.
- Du Pont de Nemours and Company, Inc., Film Department. *Master Summary, Latest Facts About Today's Purchases in Super Markets, 88 Product Classifications*. Wilmington, Del.: E. I. Du Pont de Nemours and Company, Inc.
Supplement to "Latest Facts About Today's Shopper in Super Markets." Started 20 years ago, this is 5th and latest study of proportion of "impulse buying" by product.
- Dwoskin, Philip B., Bayton, James A., and Hoofnagle, William S. *Changing Patterns of Milk Consumption in Memphis, Tenn.* Washington, DC: US Government Printing Office, June 1954. (US Department of Agriculture, Agricultural Marketing Service, Marketing Research Report No. 69.)
A 1952 sample of 306 users and 308 nonusers of nonfat drymilk solids was revisited in 1953, with 71% reinterview plus some new interviews with people who had moved into some addresses. Data on consumption and changes in consumption. People were more aware of recent promotion campaign than of true price changes. Use of various dairy products, with expressed reasons why or why not.
- Dyer, Everett Dixon, "Roles and Role Expectations in the Two-Income Family," Ph.D. thesis. Madison, Wisconsin: University of Wisconsin, 1955.

- Economist (London), Intelligence Unit. *Paper for Printing and Writing, Tentative Forecasts of Demand in 1955, 1960, and 1965*. April, 1954. (Department of Mass Communication Clearing House, Reports and Papers on Mass Communication No. 12, April, 1954.)
- Editors of Fortune. *The Changing American Market*. Garden City, N.Y.: Hanover House, 1955.
- Trend data and projections, with some distributional estimates of proportions, and some material on suburbia. Mostly reprints from *Fortune*.
- Edwards, Ward. *An Annotated Bibliography of Very Recent Work on Decision Making*. Denver, Col.: Armament Systems Personnel Research Laboratory, Air Force Personnel and Training Research Center, Air Research and Development Command, no date (processed).
- Edwards, Ward. "An Attempt to Predict Gambling Decisions," in *Mathematical Models of Human Behavior, Proceedings of a Symposium*. Stamford, Conn.: Dunlap and Associates, 1955.
- Reports another utility-subjective probability experiment.
- Edwards, Ward. "Probability Preferences Among Bets with Differing Expected Values," *American Journal of Psychology*, LXVII (March, 1954), 56-67.
- People seem to prefer some probabilities to others, independently of expected value, number of bets compared, experimental conditions, etc.
- Edwards, Ward. "The Reliability of Probability Preferences," *American Journal of Psychology*, LXVII (March, 1954), 69-95.
- Subjective probability experiments may give preferences among probabilities rather than differences between subjective and objective value of money.
- Edwards, Ward. "The Theory of Decision Making," *Psychological Bulletin*, LI (July, 1954), 380-417.
- A survey.
- Einzig, P. "The Dynamics of Hire Purchase Credit," *Economic Journal*, LXVI (March, 1956), 17-24.
- A discussion of its effects under some assumptions about behavior.
- Elliott, F. E. "Consumer Preferences for Eggs," *Poultry Science*, X, No. 7 (1931), 400-1.
- Ellsworth, T. D., Lehr, G., and Bera, R. M. "Do You Know or Are You Guessing?" *Journal of Retailing*, XXVIII (Fall, 1952), 97-106.
- Reports a survey of 4300 34th Street shoppers in New York.
- Ellsworth, T. D., and Hulquist, J. S. "Who Shops on 34th Street and Lower Fifth Avenue?" *Journal of Retailing*, XXX (Fall, 1954), 93 ff.
- Engle, N. H., "Bread Buying Habits," *Journal of Marketing*, XXI (October, 1956), 192-196.
- Probability sample of subhouseholds on brand preferences and reasons.
- Erdman, H. E., Alcorn G. B., and Mace, A. T. *Egg Marketing in the Los Angeles Area*. Los Angeles, Calif., 1941. (California Agricultural Experiment Station Bulletin 656.)
- Esquire Magazine. *Market for High-Fidelity Equipment*, New York: Esquire, 1954.
- One of a series of three reports on home appliances or equipment. This one asked who brought up the idea (husbands, two thirds of the time) and who made the actual decision to buy (almost as high a proportion). Telephone interviews by A. S. Bennett—Cy Chaikin, Inc., with 202 recent purchasers of hi-fi equipment.
- Esquire Marketing Research Depart-

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ment, *The Market for Room Air Conditioners and Automatic Dish-Washers*, New York: Esquire, February, 1954.

Telephone interviews with 100 wives and 100 husbands in families in four metropolitan regions. Selected families which had recently bought air conditioners, and an equal number which had recently bought dishwashers. Asked who brought up the idea, kept it alive, made the decision to buy, made the decision about model, brand. Also length of planning period and who went to store to look before decision to purchase was made, and then when purchase was made. Interviews by A. S. Bennett—Cy Chaikin, Inc.

Esquire Marketing Research Department, *Appliances as Dealers See It*, New York: Esquire, March, 1954.

138 mail questionnaires returned to A. S. Bennett—Cy Chaikin, Inc. by appliance dealers about family influence in buying various appliances, and the proportion bought as gifts. This and other Esquire studies are subtitled "A Study of Family Buying Influence with Respect to———" and are used to show the importance of men in purchasing decisions.

Esquire Marketing Research Department, *Who Will Buy the First Color Television Sets*, New York: Esquire, ND (1954).

"A Survey of Buying Plans and Ownership, by Daniel Starch, and Staff Among a National Sample of Esquire Households," 287 replies to a mail questionnaire sent to 410 addresses of Esquire readers (subscribed or had bought the most recent issue) in Starch's national probability sample. Questions on who decided to buy, but not tabulated separately by sex, and ques-

tionnaires were mostly answered by women.

Family Behavior, Attitudes and Possessions. New York: John B. Pierce Foundation, 1944.

A study of 201 families in the New York area, 65 in a limited dividend housing project and the rest in a large project of one-family houses. Content deals with bedroom, bath, and storage space. Summarized in an article with the same title in *Architectural Forum*, June, 1944.

Farrell, M. J. "The Demand for Motor Cars in the United States," *Journal of the Royal Statistical Society*, Series A, Part 2, CXVII (1954), 171-93.

A complex statistical analysis using both cross section and time series data, with a probit analysis formulation for the former. Uses as variables only income, prices, and the stocks of used cars.

Fawcett Publications, Inc. *Male vs. Female influence in Buying and Brand Selection*. New York: Fawcett Publications, Inc., 1948, and same title Vol. II, 1950.

Studies for *True, the Man's Magazine*, mailed with interviews with nonresponse. Done by A. S. Bennett Associates. 1503 replies in 1950.

Federal Reserve System, Board of Governors, *Financing New Car Purchases, Part IV of Consumer Instalment Credit*, Washington, DC: US Government Printing Office.

National Analysts National Survey of 4650 new car buyers.

Federal Reserve System, Board of Governors, *National Survey of Households, 1954-56: Debt Status, Car Purchase and Home Ownership*, Section IV of Vol. 2 of Part 1 (Growth and Import) of *Consumer Instalment Credit*, Washington, DC:

US Government Printing Office, 1957.

Data from a CPS subsample of 26,000 households, interviewed in August, 1956, on household basis.

See also Lansing, Tobin.

Feldmiller, Ilajoan. "Factors in Choice and Use of Dishwashers as Reported by 163 Ohio Women, 1952." Master's thesis. Columbus, Ohio: Ohio State University, 1952.

Ferber, Robert. "The Accuracy of Aggregate Savings Functions in the Postwar Years," *Review of Economics and Statistics*, XXXVII (May, 1955), 134-48.

A study of how well functions fitted to pre-war data would predict 1947-1953 savings.

Ferber, Robert. *Expenditures for Services in the United States: Their Growth and Some Factors Influencing Them*. New York: National Bureau of Economic Research, October, 1955.

Paper given at the Conference on Consumption and Economic Development. Uses budget studies and time series, former to get income and family size elasticities, using group means.

Ferber, Robert. *Factors Affecting Durable Goods Purchases*. Urbana, Ill., March, 1955. (University of Illinois, Bureau of Economic and Business Research, Bulletin 79.)

Ferber, Robert. "Factors Influencing Durable Goods Purchases" in *Consumer Behavior: Vol. II, The Life Cycle and Consumer Behavior*, Lincoln Clark, ed. New York: New York University Press, 1955.

(Also published as a monograph by the Bureau of Economic and Business Research, University of Illinois, March, 1955.)

A panel of some 150 families in Decatur, Illinois, with an attempt

to interview them every month for eight months on past and planned purchases of durables. New families were added to check conditioning of panel and rebuild the panel. Losses from refusals and non-contact cumulated to 70% of the original sample. Analysis mostly of fulfillment of purchase plans.

Ferber, Robert. "How Aware Are Consumers of Excise Tax Changes?" *National Tax Journal*, VII (December, 1954), 355-58.

Interviews with 166 people in Champaign-Urbana indicated little awareness, and some guessing.

Ferber, Robert. "On the Reliability of Responses Secured in Sample Surveys," *Journal of the American Statistical Association*, L (September, 1955), 788-810.

Results of a paper and pencil questionnaire given to family members as to past purchases and plans to buy and who has the most influence on purchases. He finds some discrepancies in reported information depending on who is reporting.

Ferber, Robert. "On the Stability of Consumer Expectations," *Review of Economics and Statistics*, XXXVII (August, 1955), 256-66.

A study of the stability of replies to identical questions asked every month of a panel sample. It was low for this study.

Ferber, Robert. "The Role of Planning in Consumer Purchases of Durable Goods," *American Economic Review*, XLIV (December, 1954), 854-74.

A study of purchase plans and fulfillment in his Decatur, Illinois consumer panel during 1951-52. See the full report, *Factors Affecting Durable Goods Purchases*.

Ferber, Robert. "Sales Forecasting by Sample Surveys," *Journal of Market-*

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ing. XX (July, 1955), 1-13.

Looks at Survey of Consumer Finances plans against later reported purchases, favors consumer panels.

Ferber, Robert. *A Study of Aggregate Consumption Functions*. New York: National Bureau of Economic Research, 1953. (Technical Paper 8.)

A study of their statistical properties and predictive accuracy.

Ferber, R. and Wales, H. G. "The Market for Prefabricated Housing," *Journal of Marketing*, XVI (July, 1951), 18-28.

A survey of 439 families in Champaign and Urbana.

Ferber, R., and Wales, H. *Which: Utility Room or Basement?* Urbana, Ill.: University of Illinois, 1951.

An interview survey of 439 people in Champaign-Urbana, Illinois.

Festinger, Leon. "Social Psychology and Group Processes," in *Annual Review of Psychology*, VI. Stanford, Calif.: Annual Reviews, Inc., 1955.

A review article.

Firth, Raymond. *Elements of Social Organization*. London: Watts and Company, 1951.

The Josiah Mason Lectures delivered at the University of Birmingham. A study of social incentives in different cultures, e.g. status goals, and cultural restraints on acceptable paths to these goals. Some cultures use resources in potlatches to achieve status, some refuse to accept interest. Men may work in order to retain membership in their group, even though their rewards depend on their relationships to others, not on their contribution.

Firth, Raymond, *Malay Fishermen: Their Peasant Economy*. London: Kegan Paul, 1946.

An anthropological study with attention to the economic arrange-

ments of the culture.

Fischer, C. M., and Leach, D. B. *Consumer Response to the Marketing of Cut-up Turkey*. Corvallis, Oregon, April, 1938. (Oregon Agricultural Experiment Station Bulletin 265.)

Fischer, S. H. "Consumption of Eggs in Syracuse," *Cornell University Farm Economist*, CLVII (1947), 40-70.

Fish, Marion. *Buying for the Household as Practiced by 368 Farm Families in New York, 1928-29*. Ithaca, N.Y., June, 1933. (Cornell Agricultural Experiment Station Bulletin 561.)

Fisher, Burton R., and Withey, Stephen B. *Big Business as the People See It*. Ann Arbor, Mich.: Survey Research Center, University of Michigan, December, 1951.

A study of attitudes toward big business, including the quality of its products. Interviews with a national cross section of 1227 adults.

Fisher, Janet A., "Family Life Cycle Analysis in Research on Consumer Behavior," in *Consumer Behavior: Vol. II, The Life Cycle and Consumer Behavior*, Lincoln Clark, ed. New York: New York University Press, 1955.

Contains some tables comparing saving by age groups in US and Britain.

Fisher, Janet A. "Income, Spending and Saving Patterns of Consumer Units in Different Age Groups," in *Studies in Income and Wealth*, XV. New York: National Bureau of Economic Research, 1952.

Data from Surveys of Consumer Finances.

Fisher, Janet A., "Postwar Changes in Income and Savings Among Consumers in Different Age Groups," *Econometrica*, XX (January, 1952), 47-70.

Based on data from Surveys of Consumer Finances and a Ph.D. thesis.

Fisher, Malcolm R., "Explorations in Savings Behavior," *Bulletin of the Oxford University Institute of Statistics*, XVIII (August, 1956), 201-77.

Elaborate analysis of Oxford Savings Surveys in an attempt to test the Friedman and Modigliani hypotheses. See May, 1957 issue of the same journal for a symposium commenting on Fisher's work.

Fishman, Leo. "Consumer Expectations and the Consumption Function," *Southern Economic Journal*, XX (January, 1954), 243-51.

Optimism-pessimism affects consumer spending.

Fiske, Marjorie. "How Consumers React to Radio Advertising by Retailers," *Sales Management*, XXXI (April 15, 1944).

Fiske, Marjorie, Newton, Robert K., and Curtis, Alberta. *Mass Persuasion: The Social Psychology of a War Bond Drive*. New York: Harper & Bros., 1946.

Fitzsimmons, Cleo. *Provisions for Security*. Urbana, Ill., 1950. (University of Illinois Agricultural Experiment Station Bulletin 537.)

Flagg, Grace L., and Longmore, T. Wilson. *Trends in Rural and Urban Levels of Living*. Washington, DC: US Department of Agriculture, 1949. (Agriculture Information Bulletin 11.)

A relation is reported between level of living and degree of rurality.

Flood, Merrill M. "A Group Preference Experiment," *Mathematical Models of Human Behavior, Proceedings of a Symposium*. Stamford, Conn.: Dunlap and Associates, 1955.

Compares actual group decision with individual preferences for a series of discrete objects. They had to agree on who would get one, and whether he would make side

payments. Also compares with game theoretic solutions.

They selected one, then ownership and side payments were "solved" by one (female) simply taking possession (and offering to sell). Conclusion: Coalitions are difficult because no clearly acceptable way to establish side payments.

Flugel, J. C. "Clothes Symbolism and Clothes Ambivalence," *International Journal of Psychoanalysis*, X (April-July, 1929), 205-17.

Symbolism of various articles of clothing—the hat, shoes, necktie, etc.—and speculation on the meaning of clothing in general.

Foley, J. P., Jr. "The Use of the Free Association Technique in the Investigation of the Stimulus Value of Trade Names," *Journal of Applied Psychology*, XXVIII (October, 1944), 431-35.

Three groups of 100 subjects each were given 3 different trade names to free associate to; subjects had to write down their response. The author then lists and discusses the responses. Words were coca-cola, pepsicola, dixiecola.

Folkman, William S. "Farmers' Attitudes Toward Cooperative Purchasing Organizations in Arkansas," *Proceedings of the Southwestern Sociological Society Annual Meeting*, Dallas, Texas, 1954. (Available from Louisiana State University, Baton Rouge, La.)

Mostly indifferent, but positive attitudes were related to socioeconomic and personal characteristics, such as reading farm magazines, middle to high status, and to participation.

No relation between other participation in neighboring and attitudes toward formal cooperatives.

Folkman, William S. *Membership Relations in Farmers' Purchasing Cooperatives*. Fayetteville, Ark., June,

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1955 (University of Arkansas Agricultural Experiment Station Bulletin 556.)

Interviews with 180 farmers, a random-stratified sample of co-operative members plus two closest non-member neighbors. Study of information and interests of members, and of differences between nonmembers, patrons, and low and high participation members.

Foot, George F. *Patterns of Psychological and Sociological Factors Operating in the Use of Money by Individuals and Families*. Ph.D. thesis. New York: Columbia University Teachers College, 1954.

Foot, Nelson, Anderson, W. A., and McKain, Walter C., Jr. *Families Displaced in a Federal Sub-Marginal Land Purchase Program*. Ithaca, N. Y., January, 1944. (Cornell University Agricultural Experiment Station, Department of Rural Sociology, Bulletin 11, processed).

A follow-up on 92 of the 118 families displaced.

Descriptive, little analysis except for things like young people making the adjustment more easily.

Foot, Richard J. "Demand and Prices," *Journal of Farm Economics*, XXXVII (May, 1955), 197-205.

A review article on econometric studies of demand and prices for agricultural commodities.

Foot, Richard J. *Price Elasticities of Demand for Nondurable Goods*. New York: National Bureau of Economic Research, 1955 (processed).

Paper presented at Conference on Consumption and Economic Development sponsored by the Universities-National Bureau Committee for Economic Research. A comparison of some 200 results from different studies, with a bibliography.

Fortune Magazine, Market Research Department, *A Survey of Foreign*

Travel Habits of Fortune Subscribers, New York: Fortune, September, 1953.

Mail questionnaires returned by 1459 Fortune subscribers (a 29.2% return). Characteristics of those who went abroad recently (past two years).

Fortune Magazine. *Overseas Travel Surveys*. New York: Time and Life, Inc., 1953.

Nearly 1000 travelers of five different lines were contacted. They were mostly high income people.

Foster, Mary L. "The Operation Costs of Selected Household Equipment." Master's thesis. Lafayette, Ind.: Purdue University, 1953.

Fowler, H. C. *The Relation of Quality to the Retail Price of Eggs in Rhode Island*. Kingston, R.I., 1938. (Rhode Island Agricultural Experiment Station Bulletin 265.)

Fox, Karl A. *The Analysis of Demand for Farm Products*. Washington, DC: US Government Printing Office, 1953. (US Department of Agriculture Technical Bulletin 1081.)

Fox, Karl A. "Changes in the Structure of Demand for Farm Products," *Journal of Farm Economics*, XXXVII (August, 1955), 411-28.

Fox, Karl A. "Factors Affecting Farm Income, Farm Prices and Food Consumption," *Agricultural Economics Research*, III (July, 1951), 65-82.

Fox, Karl A. "Structural Analysis and the Measurement of Demand for Farm Products," *Review of Economics and Statistics*, XXXVI (February, 1954), 57-66.

Argues that least squares single equation estimates can be used in many cases, without appreciable bias.

Foytik, Jerry. "Characteristics of Demand for California Plums," *Hilgardia*, XX (1951), 407-527.

Franzmann, Carl A. "Measuring the Air Terminal Market," *Journal of*

Air Law and Commerce, XXI (Winter, 1954), 20-38.

A study based on a carefully designed representative sample, or expenditures in airport terminals, conducted by the New York Port Authority.

Freeman, Ruth Crawford. *Spending and Saving Patterns of Illinois Farm Families from 1933 to 1950*. Urbana, Ill., September, 1955. (University of Illinois Agricultural Experiment Station Bulletin 592.)

Thirty-one families kept continuous records from 1933 to 1950, except for four that discontinued after 1940. Lacked economic extremes and probably over represented the higher educated.

Changes over a period of war and inflation. Some categories of expenses less elastic than others. Most elastic: recreation, gifts, housing improvements and repairs.

Freeman, R. C. "Twenty-Five Years of Family Accounts in Illinois," *Extension Service Review*, XXIV (1953), 212.

Freeman, R. C. "What Farm Families Spend for Housing," *Journal of Home Economics*, XLIII (April, 1951), 259-62.

Data from account-keeping farm families in Illinois, including 24 owners who kept records from 1933 through 1949, and 92 who kept records 1936-1940.

French, R. L. "Social Psychology and Group Processes," in *Annual Review of Psychology*, VII, Paul R. Farmsworth and Quinn McNemar, eds. Stanford, Calif.: Annual Reviews Inc., 1956.

A review article including pressures to conformity, leadership, group performance.

Friedman, Beatrice (For the Housing Committee). *Better Housing for The*

Family. New York: Women's City Club of New York City.

A survey of 458 families living in 5 low-cost public-housing projects in New York City. A study of how moving from slums to housing project raises aspiration levels so that people soon want something still better.

Friedman, Milton, *A Theory of the Consumption Function*, Princeton, N.J.: Princeton University Press for the National Bureau of Economic Research, 1957.

Theory that consumption depends on "permanent income" examined with a variety of data.

Friedman, Milton, and Savage, L. J. "The Utility Analysis of Choices Involving Risk," *Journal of Political Economy*, LVI (August, 1948), 279-304.

Friend, Irwin. "Relationship Between Consumers' Expenditures, Savings, and Disposable Income," *Review of Economics and Statistics*, XXVIII (November, 1946), 208-15.

Friend, Irwin, and Kravis, Irving B. "Consumption Patterns and Permanent Income," *American Economic Review Proceedings*, XLVII (May, 1957), 536-55.

More data relevant to the Friedman hypothesis.

Friend, Irwin, and Natrella, Vito. *Individuals' Saving: Volume and Composition*. New York: John Wiley & Sons, 1954.

A study of the sources of data on aggregate saving, and an attempt to reconcile them.

Fromme, Allan. "On the Use of Certain Qualitative Methods of Attitude Research," *Journal of Social Psychology*, XIII (May, 1941), 429-59.

Illustrates the use of informal discussions of respondent's answers to each item on a questionnaire, projective cartoons, an adaptation

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of the method of thematic apperception, and the method of contradiction in probing for deeper attitudes toward war.

Fugett, Kenneth A., Bayton, J. A., and Bitting, H. W. *Citrus Preferences Among Customers of Selected Stores*. College Station, Texas: Texas Agricultural Experiment Station, 1950. (Bulletin 727.)

Fulcher, G. S. "Life Insurance Saving of American Families," *Review of Economics and Statistics*, XXVII (May, 1944), 93-94.

Gabriel, Harry S. *The Marketing of Chickens, Turkeys, and Eggs in Wilmington, Del.* Newark, Del., 1939. (Delaware Agricultural Experiment Station Bulletin 597.)

Gaffin, Ben, and Associates. *What Americans Think of the Medical Profession*.

See American Medical Association.

Galloway, Robert E. *Farmers' Plans for Economic Security in Old Age*. Lexington, Ky.: University of Kentucky, Kentucky Agricultural Experiment Station, in cooperation with Agricultural Marketing Service, US Department of Agriculture, June, 1955. (Kentucky Agricultural Experiment Station Bulletin 626.)

A study of 204 farm operators in Harrison County on reported amounts needed for retirement, feelings about whether they would have it. Again most didn't want to retire. See also Connecticut Bulletin 299, Wisconsin Bulletin 182, and Texas Bulletin 774.

Garber, C. W., Jr. "Play Techniques for Interviewing on Durable Goods," *Public Opinion Quarterly*, XV (1951).

Wished to broaden the garden-tractor market. Had an interviewing kit with garden plot, rake, hoe, two tractors. Respondents are then

asked to prepare seed beds. Claim that the play technique has been good for this kind of interview (Tyler Advertising Agencies).

Gardner, Burleigh B., and Levy, Sid J. "The Product and the Brand," *Harvard Business Review*, XXXI (March-April, 1955), 33-39.

A presentation of the merits of qualitative research.

Gardner, Burleigh B., and Rainwater Lee. "The Mass Image of Big Business," *Harvard Business Review*, XXXIII (November-December 1955), 61-66.

Verbal, literary report of studies of attitudes of the "middle majority" toward big business, with emphasis on need for security.

Garvey, George. "The Role of Dissatisfaction in Economic Analysis," *Journal of Political Economy*, LVI (October 1948), 416-27.

Gerling, Amy Gessner. *Day Care for the Children of Wichita, A Study of Needs*. Wichita, Kans.: Community Planning Council, Publication 1 April, 1953.

A study of how working wives take care of their children.

"Getting Inside the Shopper's Mind," *Business Week*, November 12, 1955. Alderson and Sessions interviewed 60 housewives every week for 6 weeks, and gave personality and TAT tests. Each one had a frier on the panel too. Deflates the importance of impulse buying, emphasizes the role of wife, etc.

Gilboy, Elizabeth W. "Changes in Consumption Expenditures and the Defense Program," *Review of Economics and Statistics*, XXIII (November 1941), 155-64.

Gilboy, Elizabeth W. "Consumption and Input-Output Analysis," in *The Structural Interdependence of the Economy, Proceedings of an International Conference on Input-Output*

- Analysis, Varenna, 1954.* New York: John Wiley & Sons, 1955.
- Gilboy, Elizabeth W., "Elasticity, Consumption, and Economic Growth," *American Economic Review*, XLVI (May, 1956), 119-33.
- Gilboy, Elizabeth W. "Income-Expenditure Relations," *Review of Economics and Statistics*, XXII (August, 1940), 115-21.
- Gilboy, Elizabeth W. *Structural Relations Between Consumer Expenditure and Income*. Section E of 1954 Report. Cambridge, Mass.: Harvard Economic Research Project, 1954.
- Gilboy, Elizabeth W. *The Structure of Households in the Input-Output System*. Cambridge, Mass.: Harvard Economic Research Project, February, 1954 (processed).
- Problems of fitting the household sector into input-output studies.
- Gillen, Paul B. *The Attitudes, Opinions, and Actions of Certain Yorkville Families Regarding Health and Illness Together with Their Knowledge and Use of Local Health Resources, a Pilot Study*. New York: Cornell University Medical College, Department of Public Health and Preventive Medicine, June, 1945.
- Interviews with 95 families in a low income section of New York City.
- Girshick, M. A., and Haavelmo, Trygve. "Statistical Analysis of the Demand for Food: Examples of Simultaneous Estimation of Structural Equations," *Econometrica*, XV (April, 1947), 79-110.
- A classic article illustrating the structural equation method.
- Glasgow, Lillie, "A Study of the Ownership of Specified Electrical Household Equipment by Tennessee White Owner-Operator Farm Families in Tennessee," Masters thesis. Knoxville, Tennessee: University of Tennessee Home Management Dept, 1955.
- Glass, D. V., ed. *Social Mobility in Britain*. London: Routledge and Kegan Paul Ltd., 1954.
- Glick, Paul C. *American Families*, Census Monograph Series, New York: John Nulen and Sons, Inc., 1957.
- Important background data from the 1950 census.
- Glick, Paul. "The Family Cycle," *American Sociological Review*, XII (April, 1947), 164-74.
- Points out crucial stages in the family life cycle, and gives median ages of husbands at each transition point.
- Glick, Paul. "The Life Cycle of the Family," *Marriage and Family Living*, XVII (February, 1955), 3-9.
- Glock, Charles Y. "Some Applications of the Panel Method to the Study of Social Change," *Symposium on Measurement of Consumer Wants*. Philadelphia: American Society for Testing Materials, 1952. (Special Technical Publication 117.)
- Methods, with illustration. Only economic finding: "In a study now under way at the Bureau of Applied Social Research on operational problems in panel studies, it has been noted that those women who discontinue participating in consumer panels are more likely to be unsystematic in their buying behavior than those who continue to participate."
- Godwin, Marshall R. *Consumer Packaging as a Method of Retailing Fruits and Vegetables Produced in the Northeast, Part 1; Consumer Acceptance and Retailing Losses*. Ithaca, N.Y., July, 1951. (Cornell University Agricultural Experiment Station Bulletin 870.)
- Controlled experiments in three stores of a chain, varying prices and offering both packaged and bulk items. At same price, $\frac{2}{3}$ took bulk, but it varied with product.

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- Packaged had higher loss rates (18.5 versus 8.2%) for vegetables. Packaged sold even worse when priced a cent or two higher per pound.
- Godwin, Marshall R. *Customer Response to Varying Prices for Florida Oranges*. Gainesville, Fla., December, 1952. (University of Florida Agricultural Experiment Station, Bulletin, 508.)
- A 7 x 7 square experimental design to measure response to seven price levels in seven retail outlets over seven weeks, adjusted for number of customers who came in the stores.
- Goldfeld, A. *What Happened to 368 Families Who Were Compelled to Vacate Their Slum Dwellings to Make Way for a Large Housing Project?* New York: Lavanburg Foundation, 1933.
- Goldman, A. S., and Baker, R. L. "Habits, Preferences, and Demands of Des Moines Egg Consumers," *Poultry Science*, XXX (August, 1951), 329-39.
- Report on consumer egg preferences using photographs.
- Goldsen, Joseph M., and Alberta Curtis. "Montclair Studies the Shopping Experiences and Attitudes of Its Residents," *The Journal of Marketing*, X (October, 1945), 165-70.
- Goldsmith, Raymond, and others. *A Study of Saving in the United States*. Princeton, N.J.: Princeton University Press 1955 and 1956 (3 vols.).
- A massive historical study with only occasional motivational interpretations. Contains references to all other US data on aggregate saving.
- Gollnick, Heinz. "Demand Structure and Storage Holding on the Butter Market," *Econometrica*, XXIV (July 1956), 309-10.
- Abstract of a paper given at the Kiel Meetings, mostly statistical and methodological in orientation.
- Gollnick, Heinz. *Die Nachfrage nach Nahrungsmitteln und ihre Abhängigkeit von Preis- und Einkommensänderungen*. Hamburg, Germany: Paul Parey, 1954.
- A study of 135 Hamburg families who recorded expenditures month by month for a year, treated mostly as a time series. See reviews by Prais in *Economic Journal* and Fels in *Econometrica*.
- Goodrick, Ima J. D. "A Study of Clothing Buying Practices of Married Women of Brantley, Alabama." Master's thesis. Auburn, Ala.: Alabama Polytechnic Institute, 1953.
- Goreux, L. "Perspectives des Dépenses D'Habillement Des Français, 1954-1965," *Etudes et Conjoncture*, XI (October, 1956), 887-933.
- Uses several budget studies plus time series plus intercountry analysis, to predict future clothing demand, using income, relative prices, population changes, age and sex structure of population, proportion farmers, development of consumer credit, etc.
- Grady, E. R., and Smith, G. H. *Factors Associated with Satisfaction with Materials on Walls and Woodwork*. Kingston, R.I., 1954. (Rhode Island Agricultural Experiment Station Bulletin 326.)
- Grady, Ethyl R., Smith, Grace H., and Kuschke, Blanche M. *Rhode Island Rural Housing and Family Leisure*. Kingston, R.I., April 1953. (University of Rhode Island Agricultural Experiment Station Bulletin 315.)
- Part of Northeastern Regional Research study on housing. 400 interviews and 50 case studies on uses of houses and desired structural changes.
- Graham, L. Saxon. "Selection and Social Stratification." Unpublished

Ph.D. thesis. New Haven, Conn.: Yale University, 1951.

In a study of 150 families divided into six social classes, the author found significant differences in the way each class accepted or rejected certain innovations such as TV, canasta, and supermarkets.

Gray, P. G. *The British Household*. London: Social Survey, Montague Mansion, Cranford Street.

A report of a study showing that too many 3-bedroom houses were being built in England after the war.

Green, James W. "Factors Inducing Decisions to Build Farmhouses," *Rural Sociology*, XIX (September, 1954), 263-70.

(For complete study see J. W. Green, *The Farmhouse Building Process in North Carolina*.) Dissertation, Chapel Hill, N.C.: University of North Carolina, 1953.

Very few of the old houses had running water, but only 2.3% mentioned this. 41.4% of new houses had cold running water in kitchen.

Green, James W. "The Farmhouse Building Process in North Carolina." Ph.D. thesis. Chapel Hill, N.C.: University of North Carolina, 1953.

Gressman, Treva A. "How Married Graduate Students at Anderson College Spend Their Money." Master's thesis. Lafayette, Ind.: Purdue University, 1954.

Griffiths, William. "Changing Family Health Patterns: A Review of Recent Research," *Journal of Home Economics*, XLVI (January, 1954), 13-16.

A review of research on methods of getting people to change their health or food habits.

Grubbs, V. Davis, Clement, Wendell E., and Hunter, J. Scott. *Results of a Promotional Campaign for Lamb in Sacramento, California*, Marketing

Research Report No. 200 (Processed), Washington, DC: U. S. Department of Agriculture, Agriculture Marketing Service, Marketing Research Division, October, 1957.

Involved both store audits and market surveys, one of 518 home-makers before the campaign and one of 778 after the campaign. High correlation between use of lamb and parents' use of it.

Guest, L. "Brand Loyalty—Twelve Years Later," *Journal of Applied Psychology*, XXXIX (December, 1955), 405-08.

Guest, L. P. "The Genesis of Brand Awareness," *Journal of Applied Psychology*, XXVI (1942), 800-08.

School children in grades 3-11 were tested for knowledge (recognition) of type of product to which a specific brand name referred. All product categories were significantly different at each age.

Gulliksen, Harold. *Measurement of Subjective Values*. Princeton, N.J., July 10, 1955. (Educational Testing Service, Research Bulletin.)

Uses paired comparisons, sometimes with groups of two items, to develop a scale value for items and pairs of items. Some pairs were rated below one of the items in the pair, indicating negative complementarity?

Gun, Thomas Iver, *Merchandising Fryers in Self-Service Markets*, Ph.D. thesis. Ithaca, N.Y.: Cornell University, 1955.

Experiments plus an opinion survey.

Gunselman, Myrtle A. *Farm Incomes and Living Costs for Certain Kansas Families*. Manhattan, Kans., June, 1945. (Kansas State College Agricultural Experiment Station Bulletin 327.)

A study of the family accounts of 346 farm families who were mem-

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bers of the Kansas Farm Management Associations and kept records, some for as long as 7 years (1934-1940). Some data for the whole panel, and some for 15 families who kept records for seven consecutive years. Income and expenditure data. See Correll.

Gunselman, Myrtle A. *Farm Incomes and Living Costs for Certain Kansas Families, 1941-1945*. Manhattan, Kan., December, 1949. (Kansas State College Agricultural Experiment Station Bulletin 338.)

Data from 322 farm families members of Kansas Farm Management Associations who kept records for one or more of the five years. Income and living cost data. Some averages from the varying panel for 1934-1945.

Haavelmo, Trygve. "Family Expenditures and the Marginal Propensity to Consume," *Econometrica*, XV (October, 1947), 335-41.

"The ordinary family-expenditure functions or Engel curves, as obtained from budget data, cannot be assumed to remain invariant under transformations of the income distribution, . . . one has to operate with a much larger number of independent variables than is commonly used in order to make the individual units in a cross section sample comparable."

Haavelmo, Trygve. "Methods of Measuring the Marginal Propensity to Consume," *Journal of the American Statistical Association*, XLII (March, 1947), 105-22.

A classic article illustrating the biased nature of ordinary least squares estimates.

Haddock, Daniel, and Leslie Hernandez. *Consumer Preferences for Taniars (*Xanthosoma spp.*) in Puerto Rico, 1949-50*. Rio Piedras, April, 1952.

(University of Puerto Rico Agricultural Experiment Station Bulletin 103.)

Buying habits, effects of income, prices, quality, etc. on consumer preferences. Questions about elasticity of substitution "if" prices were such and so. Higher for lower income groups (for yams).

Hagood, Margaret Jarman. *Farm Operator Family Level of Living Indexes for Counties of the United States, 1940 and 1945*. Washington, DC, May, 1947. (US Department of Agriculture, Bureau of Agricultural Economics.)

Haire, Mason. "Projective Techniques in Marketing Research," *Journal of Marketing*, XIV (April, 1950), 649-56.

Discusses the application of an indirect "projective" form of questioning which brought forth results quite different from those of an "ordinary" marketing questionnaire.

The "market basket" technique was used to cut below surface responses and revealed significant private attitudes toward one brand of instant coffee. Quoted by everyone.

Hamburger, W. "Consumption and Wealth." Ph.D. thesis. Chicago, Ill.: University of Chicago, 1951.

Hamilton, Coradel. "The Criteria Used by Homemakers Purchasing Low-Priced Cotton House Dresses in Two Lafayette, Indiana Stores." Ph.D. thesis. Lafayette, Ind.: Purdue University, February, 1946.

Hansen Glove Corporation. *We Know What Your Customers Want*. Milwaukee, Wis.: Hansen Glove Corporation, 1956.

Based on ideas they got from the Institute for Mass Motivational Research about "types of women" and "types of gloves."

Hanson, Alice C., and Manuel A. Perez. *Incomes and Expenditures of Wage Earners in Puerto Rico*. Puerto Rico: Department of Labor, May, 1, 1947. (Bulletin 1.)

Harcourt, G. C., and Ironmonger, Duncan. "A Pilot Survey of Personal Savings," *Economic Record*, XXXII (May, 1956), 106-18.

A study in Melbourne, Australia.

Hare, P., Borgatta, E. F., and Bales, R. F. *Small Groups: Studies in Social Interaction*. New York: Alfred A. Knopf, 1955.

Harrington, O. W., and Gislason, Conrad, "Demand and Quality Preferences for Deciduous Fruits," *Journal of Farm Economics*, XXXVIII (December, 1956), 1405-14.

A study of sales in Denver supermarkets.

Havemann, Ernest, and Patricia Salter West. *They Went to College, The College Graduate in America Today*. New York: Harcourt, Brace and Company, 1952.

A mail questionnaire to college graduates. Draws conclusions as to which ones do well, on the basis of those who answered.

Hawkins, Harold, and Walters, James, "Family Recreation Activities Survey in Stillwater, Oklahoma," *Journal of Home Economics* XLIV (October, 1952), 623-26.

Reports from parents of 7th grade students (85 families).

Hay, Donald G., and C. Horace Hamilton. *Acceptance of Voluntary Health Insurance in Four Rural Communities of Haywood County, North Carolina*, 1953. Raleigh, N.C., September, 1954. (North Carolina State College Agricultural Experiment Station, Department of Rural Sociology in cooperation with U.S. Department of Agriculture, Agricultural Marketing Service, Progress Report RS-24.)

Survey of 299 households. Relates enrollment to variables like age,

occupation, income, home ownership, education, and social participation. Mostly enrolled on a group basis. Education had more effect if income was higher. High clustering of coverage, using nearest household as criterion.

Hayes, Samuel P., Jr. "Some Psychological Problems of Economics," *Psychological Bulletin* XLVII (July, 1950), 289-330.

A survey of the economic literature largely, for materials dealing with motivation, primarily of the businessman.

Health Information Foundation. *Inventory of Social and Economic Research in Health*. New York: The Foundation, annually.

Heidingsfeld, Myron S. "Why Do People Shop in Downtown Department Stores?" *The Journal of Marketing*, XIII (April 1949), 510-12.

A probability sample of 500 families in Philadelphia was questioned about why they patronized five downtown department stores. See Blankertz in *POQ* for criticism.

Heller, Walter N., Boddy, F. M. and Nelson, C. L. eds. *Savings in the Modern Economy*. Minneapolis: University of Minnesota Press, 1953.

Speeches and discussion at a conference. A few reports on research but predominately talks on analytical or policy questions.

Henderson, Peter L., *Measurement of the Rate of Movement of Apples into Consumption and Factors Associated With The Movement of Apples in Retail Food Stores*, Blacksburg, Virginia: Virginia Agricultural Experiment Station, January, 1957. (Technical Regional Publication No. 28.)

Complex statistical analysis, limited number of exploratory variables.

Henell, Olof, "Marketing Aspects of Housewives' Knowledge of Goods," Göteborg: Institute for distributions-ekonomisk och administrative forsk-

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- ning (The Institute for Marketing and Management Research), 1953. (Meddelande No. 1.)
- Herbst, P. G. "The Measurement of Family Relationships," *Human Relations*, V (February, 1952), 3-36.
 Asked 86 children in Melbourne, Australia, who did what in the family and who made certain major decisions.
- Herrman, Cyril C., and Stewart, John B., "The Experimental Game," *Journal of Marketing*, XXII (July, 1957), pp.12-20.
 People took longer chances when losing, and were more conservative when winning.
- Hickman, C. Addison, and Kuhn, Manfred H. *Individuals, Groups, and Economic Behavior*. New York: Dryden Press, 1956.
 Attempts to absorb all of motivation into role theory and self-perception ("people are motivated by the roles they play") and says nothing directly about consumer behavior.
- Hicks, J. W., and Kohls, R. L. "Memomotion Study as a Method of Measuring Consumer Behavior," *Journal of Marketing*, XX (October, 1955), 168-70.
 Description of a method of taking photographs of customers at store counters, one per second, to see what people of different ages and sexes do.
- Hildreth, Clifford, and Jarrett, F. A. *A Statistical Study of Livestock Production and Marketing*. New Haven, Conn., 1955. (Cowles Commission for Research in Economics Monograph 15.)
- Hilgard, Ernest R. *Theories of Learning*. 2d ed; New York: Appleton-Century-Crofts, 1956.
 A comprehensive review of both theory and research in learning.
- Hill, T. P. "Incomes, Savings, and Net Worth: The Savings Surveys of 1952-1954," *Bulletin of the Oxford Institute of Statistics*, XVII (May, 1956), 129-72.
 Data from the British saving surveys.
- Hillman, Christine H. *Factors Influencing the Lives of a Group of Young Farm Families*. Wooster, Ohio, September, 1954. (Ohio Agricultural Experiment Station Research Bulletin 750.)
 Interviews with 150 young farm couples living in four central Ohio counties, married 1-5 years, living on farm and getting most of their income from it. Not a sample. A little information on planning for saving, management of income, buying habits, and concern with debts.
- Hochstim, Esther S., *Homemakers Appraise Citrus Products, Avocados, Dates and Raisins*, Washington, DC: US Department of Agriculture Agricultural Marketing Service, Marketing Development Branch, September, 1957. (Marketing Research Report No. AMS-207.)
 2,572 personal interviews in Spring, 1957, with a national probability sample of homemakers.
- Hochstim, Esther S., *Teenage Girls Discuss Their Wardrobes and Their Attitudes Toward Cotton and Other Fibers*, Washington, DC: Agricultural Marketing Service, US Department of Agriculture, Marketing Research Division, 1957. (Marketing Research Report No. 155.)
 (Preliminary summary report was published in March, 1956, same title). Sample field work and processing by Audits and Surveys Co., New York. Also interviews with mothers, who felt like daughters, though they referred more to durability, expense, etc.
- Hochstim, Esther S., *Selected Data Relating to Women's Attitudes Toward Wool and Other Fibers in Suits*,

JAMES MORGAN

Skirts, and Sweaters and in Home Sewing and Knitting. Washington, DC: US Department of Agriculture, September, 1956. (AMS-140.)

This preliminary report of an extensive study presents a preview of some of the major findings relating to women's use of and attitudes toward wool and other fibers in three items of clothing: fall, winter, and spring suits, skirts, and sweaters. Included are certain tables on moth-proofing, methods of cleaning and washability, sweater purchase, knitting, and home sewing. A full report is being prepared.

Hochstim, Esther S. *Women's Attitudes Toward Wool and Other Fibers in Suits, Skirts, and Sweaters.* Washington, DC: US Government Printing Office, April, 1956. (US Department of Agriculture, Agricultural Marketing Service, Preliminary Summary Report AMS-115.)

A report based on 2425 personal interviews made between October, 1955 and January, 1956 with homemakers and other women between 18 and 65 years of age. An area probability sample representative of all households in the United States. There was a general preference for wool, and for fibers with which the women had had experience. Expressed reasons are given.

Hochstim, Esther S. *Women's Opinions of Cotton and Other Fibers in Selected Items of Clothing.* Washington, DC: US Government Printing Office, March, 1956. (US Department of Agriculture, Marketing Research Report 112.)

Sampling, interviewing and processing were done by National Analysts. 2281 women were interviewed; representing all homemakers, and other women between the ages of 18 and 65. Interviewing was done in May and June, 1954.

Comparisons are made for some fibers with a study done 7½ years earlier of a similar sample of 1782 women.

Hoffer, Charles R., and Jane, Clarence. *Health Needs and Health Care in Two Selected Michigan Communities.* East Lansing, Mich., June, 1952. (Michigan State University Agricultural Experiment Station, Special Bulletin 377.)

Interviews with 86 female heads of households, some with a doctor nearby, some without. Questions about untreated symptoms and reasons for neglect. Satisfaction with doctors, information on expenditures and on attitudes toward prepayment plans.

Hoffer, Charles R. and others. *Health Needs and Health Care in Michigan.* East Lansing, Mich., June, 1950. (Michigan State College Agricultural Experiment Station, Section of Sociology and Anthropology, Special Bulletin 365.)

A probability sample of 1113 households, with some information on the 3786 individuals in the households, and attitudes and opinions of a random subselection of 717 adults. Unmet care measured from a list of untreated reported symptoms; also reports on difficulties in getting doctors, on participation in prepayment plans, and attitudes toward a number of medical care issues.

Holaday, Helen Lucile. "Expenditure Patterns of Selected Iowa Farm Families Keeping Home Accounts, 1940-1949." Master's thesis. Ames, Iowa: Iowa State College, 1952.

Hollingsworth, Helen, Monroe, Day, Klem, Margaret C., and Benson, Karl L. *Family Expenditures for Medical Care.* Washington, DC: US Department of Agriculture, 1941. (Miscellaneous Publication 402.)

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- Rural data from the 1935-1936 Consumer Purchases Study.
- Hollis, Ernest V., and associates, *Costs of Attending College*, Washington, DC: US Government Printing Office, 1957. (Office of Education, U. S. Department of Health, Education and Welfare, Bulletin 1957, No. 9.) Data from 15,316 students in 110 colleges on income and expenditures. Study done in 1952-1953. No adjustments for varying sampling and response rates.
- Honey, Ruth R., and Britton, Virginia. *Some Aspects of Financial Planning Among Rural Families in a Central Pennsylvania Community*. University Park, Pa., April, 1956. (Pennsylvania State University College of Agriculture, Agricultural Experiment Station, Progress Report 148.) Interviews were taken simultaneously but separately with husband and wife in 252 families in selected rural communities. Low response rate. This is a preliminary analysis of the answers to five questions on financial situation and goals.
- Honey, Ruth R., and Smith, W. M. *Family Financial Management Experiences As Reported by 179 College Students*. State College, Pa., December, 1952. (Pennsylvania State College School of Home Economics, Research Publication 113.) Foreign born parents were more likely to tell children how to spend their money or to advise them, and less likely to talk it over with them (children reported). Decisions to buy furniture were more likely to be made jointly by father-mother than groceries (mother) or automobile (father) or clothing or education (father, mother, and student). Reports on family financial plans, students' reactions to them, and how their own plans would differ.
- Hood, William C. "Empirical Studies of Demand," *Canadian Journal of Economics and Political Science*, XXII (August, 1955), 309-27. An appraisal of demand studies, mostly statistical studies of time series.
- Hopp, Henry, and Foote, Richard J. "A Statistical Analysis of Factors that Affect Prices of Coffee." *Journal of Farm Economics*, XXXVII (1955), 429-38.
- Hopper, W. C. *Consumption of Certain Perishable Farm Products in Albany*. Ithaca, N. Y., 1934. (Cornell Agricultural Experiment Station Bulletin 586.)
- Hopper, W. C. "Income and Food Consumption," *Canadian Journal of Economics and Political Science*, IX, No. 4 (1943), 487-506.
- Hotchkiss, Alida S. *Consumer Buying of Potatoes and Store Offerings*. Ithaca, N. Y., June, 1941. (Cornell Agricultural Experiment Station Bulletin 764.)
- Houthakker, Hendrik S., "An International Comparison of Household Expenditure Patterns, Commemorating the Centenary of Engel's Law," *Econometrica*, XXV (October, 1957), 532-51. Elasticities of expenditure on food, clothing, housing, and miscellaneous with respect to income based on regressions from about 40 surveys from about 30 countries. Elasticities are "similar but not equal."
- Houthakker, H. S., and Haldi, John, *Household Investment in Automobiles*, Preliminary Results of a Cross-Section Analysis, Stanford, California: Stanford University, November, 1957. (processed) Analysis of data from the J. Walter Thompson panel for 1952 and 1955, indicating that "gross investment" in cars depends on initial

inventories as well as income, and that after eliminating "taste" differences, initial inventories are less important.

Hovermale, Ruth. "Factors Affecting the Clothing Purchases of High School Home Economics Students with Implications for Consumer Buying." Master's thesis. Columbus, Ohio: Ohio State University, 1954.

Hovland, Carl I., Janis, Irving L., and Kelley, Harold H. *Communication and Persuasion, Psychological Studies of Opinion Change*. New Haven: Yale University Press, 1953.

Contains a summary of most of the work done before 1953 on communication and persuasion. Very little of it was on change in opinions relative to consumer behavior, and the dependent variable is generally change in opinion rather than change in behavior; but some findings may carry over into the economic field.

Hoyt, Elizabeth E. "The Impact of a Money Economy on Consumption Patterns," *Annals of the American Academy of Political and Social Science* (May, 1956), 12-22.

A qualitative descriptive survey of an area in which there are almost no quantitative data.

Hunter, J. Scott. *Purchaser's Opinions of Frozen Cranberries in Minneapolis—St. Paul*. Washington, DC: US Department of Agriculture, Agricultural Marketing Service and Farmer Cooperative Service, June, 1957. Marketing Research Report No. 183.

Telephone interviews with 473 purchasers whose names were taken at time of purchase.

Hunter, Starley. "An Economic Analysis of Rural and Urban Family and Home Living." Ph.D. thesis. Lafayette, Ind.: Purdue University, 1948.

Hunter, S. M. "How Farm Families Are Meeting the Cost-Price Squeeze . . .

Effects on Levels of Living," *Journal of Home Economics*, XLVI (January, 1954), 8-9.

Hunter, S. M., and Bottum, J. C. *Living Expenditures and Income of Farm and City Families in Miami County, Indiana*. West Lafayette, Ind., May, 1953. (Purdue University, Indiana Agricultural Experiment Station, Bulletin 588.)

Farm families appear to be at least as well off as the city ones.

Hunter, Woodrow W., and Maurice, Helen. *Older People Tell Their Story*. Ann Arbor, Mich.: University of Michigan Institute for Human Adjustment Division of Gerontology, 1953.

A survey in Grand Rapids.

Huntington, Emily. *Cost of Medical Care: The Expenditures for Medical Care of 455 Families in the San Francisco Bay Area, 1947-1948*. Los Angeles: University of California Press, 1951.

A sample from union lists of milk wagon drivers, grocery clerks, and painters, primarily to provide data for the Heller Committee cost of living budgets.

Huntington, Emily H. *Spending of Middle-Income Families, Incomes and Expenditures of Salaried Workers in the San Francisco Bay Area in 1950*. Berkeley, California: University of California Press, 1957.

Done so the Heller Committee could price a budget for salaried workers in the middle income range. An inadequate sample yielded 59 usable schedules.

Hurst, Robert. "Consumer Buying Habits in Selected Areas of St. Louis, Missouri." Ph.D. thesis. Columbia, Mo.: University of Missouri, 1954.

Husband, R. W., and Godfrey, Jane. "An Experimental Study of Cigarette Identification," *Journal of Ap-*

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plied Psychology, XVIII (April, 1934), 220-51.

One of the few published studies of consumer ability to discriminate between brands. Only 31% guessed their own brand.

Imberman, A. A. "A Public Relations Policy for Private Utilities," *Public Opinion Quarterly*, XIII (Spring, 1949), 23-30.

A 10-state survey based on interviewing which used "standard projective techniques dressed up in new bib and tucker" revealed many unflattering stereotypes associated with private utilities.

Ingalls, Ida. "Clothing Problems of the Grade School Girl," *Journal of Home Economics*, XLVIII (June, 1956), 422-25.

Questionnaires sent home from school were returned by 1100 mothers of girls aged 7-14 years.

Institute of Life Insurance, *The Life Insurance Public*, New York, February, 1957.

Institute for Motivational Research, Inc. (Dichter). *A Research Study on Pharmaceutical Advertising*. New York: Pharmaceutical Advertising Club, 1955.

Interviews with 207 doctors, a "systematic quota sample," 98 of them "depth interviews," 106 "projective techniques," and 3 "insight interviews." Many quotations, and general picture of doctor's feelings toward drug and drug companies. Can be considered a study of doctors as consumers of drug products.

Institute for Research in Mass Motivations, Inc. (Dichter). *A Psychological Research Study of the Major Appeals in Current Beer Advertising*. Montrose, N. Y.: Institute for Research in Mass Motivations, Inc., 1954 (processed).

Compares a content analysis of

beer advertising with "the way people really feel and talk about beer," using 379 "depth interviews and projective tests." Also report of a blindfold test where 81% of the tasters were unable to distinguish the different brands. Compares the "personality" of beer with the "personality" of brands as advertised.

Institute for Research in Mass Motivations, Inc. (Dichter). *Why Men Buy Shoes*. New York: National Shoe Institute (National Shoe Manufacturers Association, and National Shoe Retailers Association.)

One hundred depth interviews "in various parts of the country"; many quotations to show that people like comfort, yet feel light summer shoes may not provide enough support, are concerned about the risk of getting an uncomfortable pair, etc.

Jacobs, Milton, and Levine, Daniel. *Men's Ownership of Selected Clothing Items and Their Fiber Preferences*, Preliminary Summary Report. Washington, DC: US Department of Agriculture, Agricultural Marketing Service, Marketing Research Division, April, 1957.

2379 interviews with men 16 and over. An area probability sample, done by Crossley, S-D Surveys, of New York.

Jacobs, Walter, and Winston, Clement. "The Postwar Furniture Market and the Factors Determining Demand," *Survey of Current Business*, XXX (May, 1950), 8-11.

Aggregate demand analysis using time series data.

Jarvik, Murray E. "Probability Estimates and Gambling," in *Mathematical Models of Human Behavior, Proceedings of a Symposium*. Stamford, Conn.: Dunlap and Associates, 1955.

Reports one experiment dealing with subjective probability, plus discussion.

Jasper, A. William, and Cray, Raymond E. *Consumer Preferences, Practices and Demands in Purchasing Eggs and Poultry in Columbus, Ohio*, 1950. Wooster, Ohio, October, 1953. (Ohio Agricultural Experiment Station, Research Bulletin 736.)

Interviews with 300 people in Columbus. See also Master's thesis by Jasper at Ohio State University, 1953.

Jonassen, C. T. *Downtown vs. Suburban Shopping: Measurement of Consumer Practices and Attitudes in Columbus, Ohio*. Columbus, Ohio: The Ohio State University Bureau of Business Research, 1953.

This was also published as: Highway Research Board, National Research Council *Parking as a Factor in Business: Part I, Attitudes Toward Parking and Related Conditions in Columbus*. Washington, DC: National Academy of Sciences, 1953. It is also incorporated into the three-city study by Jonassen, published in 1955.

Jonassen, C. T. *The Shopping Center versus Downtown, A Motivation Research on Shopping Habits and Attitudes in Three Cities*. Columbus, Ohio: Ohio State University Bureau of Business Research, 1955.

An interview study of shopping habits and attitudes, analyzed by age and income.

Jones, Eloyse Willodean. "Types and Extent of Credit Used in Home Management by Farm Families in Elmore County, Alabama." Master's thesis. Tuskegee, Ala.: Tuskegee Institute, 1950.

Judge, George G. *Econometric Analysis of the Demand and Supply Relationships for Eggs*. Storrs, Conn., January, 1954. (College of Agriculture,

University of Connecticut, Storrs Agricultural Experiment Station, Bulletin 307.)

Uses the Cowles Foundation approach, with twelve equations in the original model, then some simplification.

Jureen, L. "The Demand for Milk and Dairy Products in Sweden," *Proceedings of the XIIth International Dairy Congress*. Stockholm, Sweden: Haeggströms, 1949, 383-403.

Jureen, L. *Long-Term Trends in Food Consumption*. Uppsala, Sweden, August, 1954.

Mimeographed paper presented at the 16th European Meeting of the Econometric Society. Studies price and income elasticities, prewar and postwar.

Jureen, L. "Long-Term Trends in Food Consumption: A Multi-Country Study," *Econometrica*, XXIV, (January, 1956), 1-21.

A study of improvements in national food standards as income levels rise.

Jureen, L., and Wold, H. *The Regional Forecasting of Demand*, Report to the World Population Conference. Rome, 1954 (processed).

Juster, Thomas. "Expectational Data and Short Term Forecasting: An Analysis of the Saving-Income Ratio with Special Reference to the Demand for Consumer Durable Goods." Ph.D. thesis. New York: Columbia University, 1957.

Attempts to show that saving and durables are substitutes, then compares the predicting ability of purchase plans from the Surveys of Consumer Finances with those from Consumers Union's mail questionnaire to its members. The latter gives higher correlations.

Juster, Thomas, *The Predictive Value of Consumers Union Spending Intentions Data*, Paper presented at a Con-

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ference on the Quality and Economic Significance of Anticipations Data. New York: National Bureau of Economic Research, 1957. (Processed.)

Kaplan, A. D. H. "Expenditure Patterns of Urban Families," *Journal of the American Statisticians Association*, XXXIII (March, 1938), 81-100.

Kapp, Karl W. "Rational Human Conduct and Modern Industrial Society," *Southern Economic Journal*, X (October, 1943), 136-50.

A Study of "nonrational" behavior.

Karlin, J. E., and Potter, R. K. "Preference Research," *Bell Laboratories Record*, (May, 1954), 161-66.

General discussion of their research, mostly on speech-controlled dialing, colors, etc.

"In other words, polling is not reliable when unsupported by actual experience with the new devices, systems, or services about which an opinion is desired."

Katona, George. "Analysis of Dissaving," *American Economic Review*, XXXIX (June, 1949), 673-83.

Data from Survey of Consumer Finances show dissaving associated frequently with large (discretionary) expenditures on durables, and increases in income.

Katona, George, *Changes in Consumer Expectations and Their Origin*, Paper presented at a Conference on the Quality and Economic Significance of Anticipations Data. New York: National Bureau of Economic Research, 1957. (Processed.)

Katona, George, "Attitudes Toward Saving and Borrowing," *Consumer Instalment Credit*, Part II, Vol. I, Washington, DC: US Government Printing Office, 1957.

Katona, George, "Consumer Buying Habits: Analysis of a Ten-Year Study," *The Integrated Approach to Prudent Planning*, New York: Amer-

ican Management Association, 1957. AMA Marketing Services No. 101.

Katona, George. "Contribution of Psychological Data to Economic Analysis," *Journal of the American Statistical Association*, XLII (September, 1947), 449-59.

Katona, George. "Effect of Income Changes on the Rate of Saving," *Review of Economics and Statistics*, XXXI (May, 1949), 95-103.

Katona, George. "Expectations and Decisions in Economic Behavior," *The Policy Sciences*. Stanford, Calif.: Stanford University Press, 1951.

Katona, George. "The Predictive Value of Data on Consumer Attitudes," in *Consumer Behavior: Vol. II, The Life Cycle and Consumer Behavior*, Lincoln Clark, ed. New York: New York University Press, 1955.

Some data on the relation of consumer attitudes to mass spending-saving behavior.

Katona, George. *Psychological Analysis of Economic Behavior*. New York: McGraw-Hill Book Company, 1951.

A pioneering development of theory, supported by data available by 1951.

Katona, George, and Fisher, Janet. "Postwar Income Changes of Identical Consumer Units," *Studies in Income and Wealth*, Vol. XIII. New York: National Bureau of Economic Research, Inc., 1951.

Katona, George, and Klein, L. R. "Psychological Data in Business Cycle Research," *American Journal of Economics and Sociology*, XII (October, 1952), 11-12.

Katona, George, Klein, L. R., Lansing, J. B., and Morgan, J. N. *Contributions of Survey Methods to Economics*. New York: Columbia University Press, 1954.

Background material on surveys, and studies of variability of consumer behavior and of consumer

saving. The studies of saving use a variety of methods and two different definitions of saving. Data from Surveys of Consumer Finances.

Katona, George, Lansing, John B., and de Janosi, Peter. "Stock Ownership Among American Families," *Michigan Business Review*, V (January, 1953), 12-16.

Data from Surveys of Consumer Finances, on distribution of aggregate.

Katona, George, and Mueller, Eva. "A Study of Purchase Decisions," in *Consumer Behavior: Vol. I: The Dynamics of Consumer Reaction*, Lincoln Clark, ed. New York: New York University Press, 1954.

A study of 360 buyers of durable goods and 361 buyers of sport shirts from a national probability sample. The information getting, decision making process in buying is studied intensively. Indexes are devised to measure circumspectness, information seeking, choosing with respect to price, choosing with respect to brand, number of features considered, and these five were combined to form an over-all index of deliberation. There were great variations in behavior, but there was somewhat more deliberation in buying larger items, but other factors such as urgency of need, or a good buy available, or because buyers were satisfied with a previous model of the same brand affected the amount of deliberation, and some choices looked like simply careless or capricious behavior.

Katona, George, and Mueller, Eva. *Consumer Attitudes and Demand, 1950-1952*. Ann Arbor, Mich.: Survey Research Center, University of Michigan, 1953.

A study based on four national

surveys of how consumer attitudes changed during the Korean war, and how these attitudes related to subsequent consumer spending-saving behavior.

Katona, George, and Mueller, Eva. *Consumer Expectations, 1953-1956*. Ann Arbor, Mich.: Survey Research Center, University of Michigan, 1956.

The second of a series of studies of the relation of consumer attitudes to spending-saving behavior, with special chapters on automobiles, housing, and the construction of an experimental index of changes in consumer attitudes.

Katona, George, and Mueller, Eva. "The Consumer Outlook for 1956," *Michigan Business Review*, VIII (January, 1956), 1-8.

Results of a national survey in October 1955 compared with five previous surveys of consumers.

Katz, Elihu, and Lazarsfeld, Paul. *Personal Influence, The Part Played by People in the Flow of Mass Communication*. Glencoe, Ill.: The Free Press, 1955.

A study of those reported by themselves or others as opinion leaders in several areas of consumer decision. It relates leadership to gregariousness, social status, interest, sex, etc.

Katz, Elihu and Menzel, Herbert. "On the Flow of Scientific Information in the Medical Profession." New York: Columbia University, Bureau of Applied Social Research, 1954 (2 vols.).

An unpublished research report on a pilot study of the acceptance of a new series of drugs by doctors.

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A review article. Most of the stud-

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ies deal with effectiveness of groups in solving given problems, not in determining which problems to solve; and most deal with *ad hoc* groups rather than with groups with experience in working together and close ties, such as a family.

Ketchum, Lucile. *Planning the Use of the Family Dollar*. East Lansing, Mich., 1950. (Michigan Extension Bulletin 256.)

Kiehl, Elmer R., and Rhodes, James. "New Techniques in Consumer Preference Research," *Journal of Farm Economics*, XXXVIII (December, 1956), 1335-45.

A few data, plus extensive references to test reports.

Kilpatrick, Franklin P. *Motivation, Perception and Action*. Princeton, N.J.: Princeton University Psychology Department, 1953 (processed).

Copies available on request from the author.

Summarizes some unusual recent experiments which show how past experience and purpose help determine what people perceive and how they act.

Kimmel, D. C. *Use of Citrus Products in Meridian, Mississippi Households, Spring of 1951*. Gainesville, Fla.: University of Florida Agricultural Experiment Station, December 1952. (Bulletin 509.)

Analyzes preferences and consumption by income, race, age, and family composition for 660 families.

Kimmel, Lewis H. *Share Ownership in the United States*. Washington, DC: The Brookings Institution, 1952.

A national interview survey done at the request of the New York Stock Exchange, in addition to data from the Exchange. Data on ownership but not on value of holdings, so no information on

distribution of aggregate stock, as in reference No. 404.

Kirkpatrick, E. L. "The Life Cycle of the Farm Family," Madison, Wis., 1934. (Wisconsin Agricultural Experiment Station Research Bulletin 121, Wisconsin AES.)

Kisselgoff, Avram. *Factors Affecting the Demand for Consumer Installment Sales Credit*. New York: National Bureau of Economic Research, 1952. (Technical Paper 7.)

An aggregate correlational study.

Kistin, Helen. *Consumer Expenditures for Durable Goods*. Cambridge, Mass.: Harvard Economic Research Project, July, 1953 (processed).

Kleh, Louise T. "A Study of Buying Practices Concerning the Maternity Wardrobes of a Selected Group of Women." Master's thesis. College Park, Md.: University of Maryland, 1954.

Klein, L. R. "Assets, Debts, and Economic Behavior," *Studies in Income and Wealth*, XIV. New York: National Bureau of Economic Research, Inc., 1951.

Statistical studies using data from Surveys of Consumer Finances.

Klein, L. R. "The Empirical Foundations of Keynesian Economics," *Post Keynesian Economics*. New Brunswick, N.J.: Rutgers University Press, 1954, 277-319.

Summarizes empirical data available on the consumption function, etc.

Klein, L. R. "Estimating Patterns of Savings Behavior from Sample Survey Data," *Econometrica*, XIX (October, 1951), 438-54.

Reports an analysis of Survey of Consumer Finances data.

Klein, L. R. "Major Consumer Expenditures and Ownership of Durable Goods," *Bulletin of the Oxford University Institute of Statistics*, XVII (November, 1955), 387-414.

An analysis of three British surveys of 1952, 1953, and 1954, using both tables and multiple correlation.

Klein, L. R. "Patterns of Savings, the Surveys of 1953 and 1954," *Bulletin of the Oxford University Institute of Statistics*, XVII (May, 1955), 173-214.

A report on two British saving surveys.

Klein, L. R. "A Post-Mortem on Transition Predictions of National Product," *Journal of Political Economy*, LIV (August, 1946), 289-308.

Klein, L. R. "Statistical Estimation of Economic Relations from Survey Data," *Contributions of Survey Methods*, New York: Columbia University Press, 1954.

Klein, L. R., Katona, George, Lansing, John, and Morgan, James. *Contributions of Survey Methods to Economics*. New York: Columbia University Press, 1954.

Studies of saving behavior based on data from the Surveys of Consumer Finances.

Klein, L. R., and Lansing, J. B. "Decisions to Purchase Consumer Durable Goods," *Journal of Marketing*, XX (October, 1955), 109-32.

Complex analysis of reinterview sample data to see what initial variables accounted for subsequent purchasing behavior.

Klein, L. R., and Mooney, H. W. "Negro-White Savings Differentials and the Consumption Function Problem," *Econometrica*, XXI (July, 1953), 425-56.

Data from surveys of consumer finances show Negroes save same or more except high income southern Negroes. Elaborate statistical analysis.

Klein, Lawrence R., and Morgan, J. N. "Results of Alternative Statistical Treatments of Sample Survey Data,"

Journal of the American Statistical Association, XLXI (December, 1951), 442-60.

Saving functions are used as illustrations, and the problem of over-emphasis on upper-income behavior for reasons of statistical precision, is raised.

Klein, L. R., Straw, K. H., and Vandome, Peter. "Savings and Finances of the Upper Income Classes," *Bulletin of the Oxford University Institute of Statistics*, XVIII (November, 1956), 293-319.

Interviews with 305 wealthy Englishmen in London and the Home Counties.

Klitzke, Dorothy. "Clothing Owned by New York Farm Families," *Journal of Home Economics*, XLIII (November, 1951), 716-18.

A survey in July, 1950 of 103 farm families in three townships of Tompkins County, New York, on number and age of outer garments owned.

Knoll, Marjorie. *Economic Contributions and Receipts of Household Members*. Ithaca, N.Y.: Cornell University Agricultural Experiment Station. (Experimental Station Memoir, in press.)

Knoll, Marjorie M. "Economic Contributions Given to and Received from Individual Members of Families and Households in Relation to Their Financial Situations." Doctor's thesis. Ithaca, N.Y.: Cornell University, 1954.

Knoll, Marjorie M. "Economic Contributions to and from Individual Members of Families and Households," *Journal of Home Economics*, XLVII (May, 1955), 323-26.

A study of 202 households in Cortland, New York and environs.

Knudsen, Lila F., and Thomsen, F. L. "Habits in Consumption of Eggs in New York City," *Proceedings of 7th*

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- World's Poultry Congress* (1939), 395-400.
- Kohls, R. L., and Oppenheimer, Norman. *Quality Recognition and Purchasing Habits of Egg Consumers*. Lafayette, Ind., 1953. (Purdue University, Agricultural Experiment Station Research Bulletin 592.)
- Koos, Earl L. *The Health of Regionville, What the People Thought and Did About it*. New York: Columbia University Press, 1954.
- Over 500 households were interviewed four times a year for four years. Social class is related to medical care patterns.
- Kornhauser, Arthur. *Detroit as the People See It*. Detroit, Mich.: Wayne University Press, 1952.
- Interviews with 593 people in the summer of 1951, primarily on their attitudes toward full acceptance of Negroes into the community.
- Kravis, Irving B. "Expenditure-Income Relationships for Consumers' Durable Goods and Problems in Their Deviation," Abstract of speech at Econometric meetings, Detroit, 1956, *Econometrica* XXV (April, 1957), 363-64.
- Krein, Mordechai, Lansing, John, and Morgan, James. "Analysis of Life Insurance Premiums," *Review of Economics and Statistics*. XXXIX (February, 1957), 46-54.
- A more detailed analysis of life insurance using complex breakdowns of Survey of Consumer Finances data, and variance analysis.
- Kuhlen, R. G., and Johnson, G. H. "Changes in Goals with Adult Increasing Age," *Journal of Consulting Psychology*, XVI (February, 1952), 1-4.
- A survey of teachers' attitudes toward retirement and changes in jobs.
- Kuznets, G. M. "Measurement of Market Demand with Particular Reference to Consumer Demand for Food," *Journal of Farm Economics*, XXXV (December, 1953), 878-95.
- A critical review of the methods used in demand studies.
- Kuznets, Simon. *Shares of Upper Income Groups in Income and Savings*. New York: National Bureau of Economic Research, 1953.
- A massive statistical study with little or no motivational interpretation.
- Laird, Donald A. "How the Consumer Estimates Quality by Subconscious Sensory Impressions," *Journal of Applied Psychology*, XVI (June 1932), 241-46.
- An experiment demonstrates that although women thought they were judging the quality of hose by texture, weave, weight, etc., they actually made judgments in terms of subliminal scents which impregnated some of the hose.
- Laird, Donald A. *What Makes People Buy?* New York: McGraw-Hill Book Company, 1935.
- Lamborn, Ellis W., and Anderson, Roice H. *Consumer Demand for Fruit, Salt Lake City, Utah, 1948-49*. Logan, Utah, August, 1952. (Utah State Agricultural College Agricultural Experiment Station Bulletin 356.)
- Two samples (fall, 1948 and spring, 1949) each covering purchases in the last six months by 446 and 512 families. Used block rental data to control to get equal numbers in each income group, i.e., a disproportionate sample without weights. Mostly just detailed expenditure data by income groups and prices paid. Prices differed radically depending on whether bought by bushel or pound, but very little by income level, except for raspberries.
- Lansing, John B. "Balance Sheet Posi-

tion of American Families," *Consumer Credit and the American Family, a Perspective Analysis*. Report of a National Consumer Credit Conference, Ann Arbor, Michigan: Bureau of Business Research, School of Business Administration, University of Michigan, 1956. (Michigan Business Papers Number 32.)

Also contains an extensive bibliography on consumer credit.

Lansing, John B., and Lilienstein, Ernest. *The Travel Market, 1955*, Report to the Travel Research Association, Ann Arbor, Michigan: Survey Research Center, Institute for Social Research, University of Michigan, 1957.

Data from a national probability sample.

Lansing, John B., and Maynes, E. S. "Inflation and Savings by Consumers," *Journal of Political Economy*, LX (October, 1952), 383-91.

Only part of consumer saving as usually defined is really deflationary, and it is distributed differently among income groups.

Lansing, John B., Maynes, E. Scott, and Kreinin, Mordechai. "Factors Associated with the Use of Consumer Credit," *Consumer Instalment Credit*, Part II, Vol. 1, Conference on Regulation (National Bureau of Economic Research and Board of Governors of the Federal Reserve System), Washington, DC: US Government Printing Office, 1957.

Lansing, John B., and Morgan, James N. "Consumer Finances over the Life Cycle," in *Consumer Behavior*, Vol. II: *The Life Cycle and Consumer Behavior*, Lincoln Clark, ed. New York: New York University Press, 1955.

Contains a large number of previously unpublished tables from Surveys of Consumer Finances using a set of life cycle categories

similar to those used by sociologists.

Lansing, John B., and Withey, Stephen B. "Consumer Anticipations: Their Use in Forecasting Consumer Behavior," *Short-Term Forecasting, Studies in Income and Wealth*, Vol. XVII. Princeton, N.J.: Princeton University Press, 1955. (National Bureau of Economic Research, Inc.)

Reinterview data on fulfillment of purchase plans, and a scheme for analyzing consumer demand in terms of ability, willingness, and plans.

Larson, Olaf F., and Hay, Donald G. "Differential Use of Health Resources by Rural People," *N.Y. State Journal of Medicine*, LII (January 1, 1952), 43-49.

Larzelere, H. E., and Nichols, W. A. "What Consumers Think About the Eggs They Buy," East Lansing, Mich., 1950 (*Michigan Agricultural Experiment Station Quarterly Bulletin XXXII*, 513-19).

Lasley, Fred G., Kiehl, Elmer R., and Brady, D. E. *Consumer Preference for Beef in Relation to Finish*. Columbia, Mo., March, 1955. (University of Missouri College of Agriculture, Agricultural Experiment Station Research Bulletin 580.)

A panel, with some difficulties in maintaining it, when given a choice for four grades of beef at the same price tended to choose the poorer grades, because they selected cuts with less fat, perhaps. Reported satisfaction afterwards was related to US grade though not perfectly.

Laurenti, Luigi M. "Effects of Non-white Purchases on Market Prices of Residences," *Appraisal Journal*, XX (July, 1952), 314-29.

A careful statistical study of how becoming interracial increases property values in an area because

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minority groups are willing to pay more for housing.

Lauterbach, Albert. *Man, Motives, and Money, Psychological Frontiers of Economics*. Ithaca, N.Y.: Cornell University Press, 1954.

A broad look at psychological aspects of business behavior and of economic reform. Little attention to consumer behavior.

Laver, James. *Taste and Fashion*. Rev. ed.; London: George G. Harrap Company, 1948.

Lazarsfeld, Paul F. "Evaluating the Effectiveness of Advertising by Direct Interviews," *Journal of Consulting Psychology*, V (1941), 170-78; reprinted in *The Language of Social Research*, Glencoe, Ill.: The Free Press, 1955.

Lazarsfeld, Paul F. "The Psychological Aspect of Market Research," *Harvard Business Review*, XIII (1934), 54-71.

Although written over twenty years ago, this remains an excellent work on the subject. Among other things, the author describes a technique employed in Europe for comparing commodities by finding the ratio of replies referring to *attributes* of the commodity to replies referring to *influences* coming from the outside world.

Lazarsfeld, Paul F., and Field, Harry. *The People Look at Radio*. Chapel Hill, N.C.: University of North Carolina Press, 1946.

A study sponsored by the National Association of Broadcasters, on peoples' attitudes toward radio and toward advertising on radio. Interviews with a national cross section of 2571 plus an additional 672 in Mountain and Pacific areas. Report of a survey conducted by the National Opinion Research Center, University of Denver, analyzed and interpreted by the Bureau of Ap-

plied Social Research, Columbia University.

Lazarsfeld, Paul F., and Kendall, Patricia L. *Radio Listening in America, The People Look at Radio—Again*. New York: Prentice-Hall, 1948.

Also sponsored by National Association of Broadcasters, and conducted by National Opinion Research Center, now of the University of Chicago. Interviews with a national "cross section" of 3529 persons. Again a study of attitudes toward radio, radio programs, and radio advertising.

LeBovitz, Corinne, and Clark, Faith. *Household Practices in the Use of Foods—Three Cities, 1953*. Washington, DC: US Government Printing Office, April, 1956. (US Department of Agriculture, Agricultural Research Service, Agriculture Information Bulletin 146.)

Surveying done in Birmingham and Indianapolis by National Analysts, Inc. and in Everett, Washington, by Washington State College, Department of Home Economics. Data on how eggs, milk, table fats, sugar, and selected vegetables were used in different households. "Practices in the use of foods studied seemed to differ less among income groups than from city to city" (p. 1).

Levy, J. P. "Leisure Time of the American Housewife," *Sociology and Social Research*, XXXV (November-December, 1950), 97-105.

Leonhard, Dietz. *Consumer Research with Projective Techniques*. Shenandoah, Iowa: Tidy House Products Company (Ajax Corporation), 1955.

1955 honor award of the Chicago Chapter of the American Marketing Association for a contribution to the Advancement of Science in Marketing. Explanation of techniques with examples.

Lever, E. A. *Advertising and Economic Theory*. London: Oxford University Press, 1947.

Mostly theoretical with a few correlations between advertising and production.

Levine, Daniel B. *Homemakers' Preferences for Pies and Canned and Frozen Cherries in Dallas . . . Detroit . . . Kansas City*. Washington, DC: US Government Printing Office, April, 1956. (US Department of Agriculture, Agricultural Marketing Service, Marketing Research Report 116.)

Interviews with 361 plus 405 plus 287 homemakers. Cities selected because of variety of products available to consumers, but random sample from directories was used in each city. Reported use of home-baked pies, and expressed preferences and reasons.

Levine, Daniel B., and Hunter, J. Scott. *Homemakers' Preferences For Selected Cuts of Lamb in Cleveland, Ohio*. Washington, DC: US Government Printing Office, March, 1956. (US Department of Agriculture, Agricultural Marketing Service, Marketing Research Report 113.)

786 homemakers interviewed on use of lamb and what they like and don't like about it. Respondents were also asked about whether advertisements of displays in stores influenced them.

Lewin, Kurt. "Forces Behind Food Habits and Method of Change," *National Research Council Bulletin* CVIII, 35-65.

Explores income and cultural differences among groups, seeking motives guiding the selection of food in each group. Also describes two experiments concerning methods of changing food habits.

Lewin, Kurt. "Group Decision and Social Change," in *Readings In Social Psychology*. New York: Henry Holt and Company, 1947.

Housewives were found to be much more cooperative when diet changes were suggested in "discussion groups" than when suggested in either lectures or personal interviews. The effect was still noticeable after two and four week intervals.

Lewis, H. G., and Douglas, P. H. "Studies in Consumer Expenditures (1901, 1918-19, 1922-24)," *Journal of Business, University of Chicago*, Part 2, Vol. XX (October, 1947).

Lewis, John P. "The Lull that Came to Stay," *Journal of Political Economy*, LXIII (February, 1955), 1-19.

Uses attitudinal data on consumers along with numerous other factors in explaining a lull in business activity.

Life Insurance Agency Management Association. *Covering the Market, A Survey of Life Insurance Ownership, Buying and Contact with Agents Among a Representative Sample of US Families. Research Report 1935-5*. Hartford, Conn.: Life Insurance Agency Management Association, 1953.

Data from a survey by Survey Research Center, University of Michigan, of a national sample of 929 families. Coverage, contact with agent, purchase, by family structure, age, income, occupation, type of community, plus some attitudinal material. Very little realization of the impact of inflation on the value of insurance (5%).

Life Insurance Ownership Among American Families, 1954. Ann Arbor, Mich.: University of Michigan, Survey Research Center, 1955.

The last of an annual series of special tabulations from the Surveys of Consumer Finances for the Institute of Life Insurance.

Life Magazine, *Life Study of Consumer Expenditures*, A Background for Mar-

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keting Decisions, Vol. I, New York: Time, Inc., 1957.

A large scale personal interview study by Alfred Politz, starting with a probability sample and interviewing 24,112 individuals in 10,243 households four times over a 13 week period. Vast amount of detail on expenditures, activities, etc.

Likert, Rensis. "Measuring Motivational Forces Influencing Consumer Behavior," in *Consumer Behavior and Motivation*, 1955 *Marketing Symposium*. Urbana, Ill.: Bureau of Economic and Business Research, College of Commerce and Business Administration of the University of Illinois, October, 1955.

Contains some data from Survey Research Center on attitudes and their relation to behavior. Other papers in this volume are theoretical or programmatic, contain no data.

Lininger, F. F., and Charles, T. B. A *Study of Egg and Poultry Consumption in Pennsylvania*. University Park, Pa., 1928. (Pennsylvania Agricultural Experiment Station Bulletin 222.)

Lionberger, Herbert F. *Low-Income Farmers in Missouri, Their Contacts with Potential Sources of Farm and Home Information*. Columbia, Mo., May, 1949. (University of Missouri College of Agriculture, Agricultural Experiment Station Research Bulletin 411.)

A study of 459 farm operators who had been rated in the lower third economically by local committeemen. Their information-getting activity was low, but related to income and to years of schooling (with interactions).

Lippitt, Vernon G. *Determinants of Consumer Demand for House Furnishings and Equipment*. Ph.D. dissertation. Cambridge, Mass.: Harvard University, 1955.

Elaborate and sophisticated study using both cross section and time series data, complex statistical procedures. The basic data for the detailed analysis are from the 1935-1936 surveys of the Bureau of Labor Statistics, which were not tabulated or available in the ideal form, requiring compromise procedures. Limited number of variables: income, occupation, family type, place of residence.

One conclusion: "It is clear that in order to understand or to predict aggregate purchases of household durables one must know the distribution of families by stages in the life cycle in considerable detail, especially in the early years. Knowledge of family size is not enough; some measure of 'age' of the family is also necessary." (P. 78.)

Lippitt, Vernon. *The Isolation of the Income Effect: An Analysis of Budget-Study Data on Family Expenditures for Food*. Cambridge, Mass.: Harvard Economic Research Project, June 24, 1955 (processed).

Data from 1935-1936 study and the 1941 survey (BLS Bulletin 822). Some hint of an income-family type interaction effect, some non-linearity with respect to income, and a city-size effect. Uses variance analysis.

Liston, Margaret Isabel. "Factors Affecting the Rates and Forms of Saving of Farm and Town Families," *Journal of Home Economics*, XLII (1950), 439-40.

A summary of a Ph.D. thesis at the University of Chicago, 1949.

Livingston, S. Morris. "Family Formation and the Demand for Residential Construction," *Survey of Current Business*, XXX (March, 1950), 8-15.

Estimates the demand for residences from "normal" rate of household formation.

Loftin, Marion T., and Galloway, Robert

- E. *The Use of Medical Services by Rural People in Four Mississippi Counties*. State College, Mississippi: Mississippi State College Agricultural Experiment Station, March, 1954. (Sociology and Rural Life Series No. 5, processed.)
- One of a number of studies of utilization of health services published by experiment stations in Mississippi, Cornell, New York, Pennsylvania, Missouri, and Washington. Relates use to socioeconomic status, sex, age, race, occupation, education of wife, for 909 families.
- Lomax, H. S. "Analysis of Demand and Supply in Textiles," *Manchester School*, January, 1948, 46-56.
- Longmore, T. W., and Taylor, C. C. "Elasticity of Expenditures for Farm Family Living, Farm Production, and Savings, United States, 1946," *Journal of Farm Economics*, XXXIII (February, 1951), 1-19.
- Uses gross farm income as base.
- Loomis, Charles P., and Beegle, J. A. *Rural Social Systems*. New York: Prentice-Hall, 1950.
- Rural sociology with emphasis on spatial arrangements and communication.
- Lorge, Irving, Fox, David, Davitz, Joel, Weltz, Paula, and Herrold, Kenneth. *Studies Contrasting the Quality of Products by Individuals and by Groups, 1920-1953*. No date or place.
- Most are *ad hoc* groups, only a few later ones even "traditioned." See Darley et al. Research supported by US Air Force Officer Education Research Laboratory, Air Force Personnel and Training Research Center, Maxwell Air Force Base, Alabama. Lorge is at Columbia University.
- Lowenstein, Frank, and Simon, Martin S. "Analyses of Factors that Affect Mill Consumption of Cotton in the United States," *Agricultural Economic Research*, VI (1954), 101-10.
- Lubell, Harold. "Effects of Redistribution of Incomes on Consumers' Expenditures," *American Economic Review*, XXXVII (March, 1947), 157-69.
- A statistical study with minimal behavioral assumptions.
- Luck, David J. *Consumer Buying Habits in the Crab Orchard Area of Illinois*, Urbana, Illinois: Bureau of Business and Economic Research. University of Illinois, 1948. (Business Studies No. 8.)
- Interviews with 1180 people on their shopping habits.
- Lundberg, George A., Komarovsky, Mirra, and McNery, Mary Alice. *Leisure: A Suburban Study*, New York: Columbia University Press, 1934.
- Lydall, H. F. *British Incomes and Savings*. Oxford: Basil Blackwell, 1955. (Oxford University Institute of Statistics Monograph no. 5.)
- A combined report on the British Saving Surveys, the counterpart on many respects to the American Surveys of Consumer Finances.
- Lydall, H. F. "The Life Cycle in Income, Saving, and Asset Ownership," *Econometrica*, XXIII (April, 1955), 131-50.
- Actually a series of tables from the British Saving Surveys showing differences among age groups.
- McAllister, Harry E. *Elasticity of Demand for Gasoline in the State of Washington*. Pullman, Wash.: State College of Washington, School of Economics and Business Administration, Bureau of Economic and Business Research, February, 1956. (Economic and Business Studies, Bulletin No. 29.)
- Time series studies for 1929-1941

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and 1946-1955, primarily to measure the price and income elasticity of demand. Finds both of these low.

McCall's Magazine. *The American Woman's Home of Tomorrow*, Part I, *Architectural Preferences*, Part II, *Remodeling Needs*, and Part III, *The New House*. New York: McCall Corporation, June, 1945.

A survey of 18,580 *McCall's* subscriber families.

McCall's Magazine. *What Women Want in Their Bedrooms of Tomorrow*. New York: McCall Corporation, 1944.

A contest survey of 10,848 families. McCall's Magazine. *What Women Want in Their Dining Rooms of Tomorrow*. New York: McCall Corporation, 1944.

A contest survey of 11,327 families. McCall's Magazine. *What Women Want in Their Kitchens of Tomorrow*. New York: McCall Corporation, 1944.

A survey of 11,887 *McCall's Magazine* subscriber families.

McCall's Magazine. *What Women Want in Their Living Rooms of Tomorrow*. New York: McCall Corporation, 1944.

A mail questionnaire contest survey of 13,539 women.

McClelland, David C. *Personality*. New York: The Dryden Press, 1951.

A collection of research reports.

McClelland, David C. "Personality," in *Annual Review of Psychology*, VII (1956). Stanford, Calif.: Annual Reviews, Inc.

A review article, including a section on motives.

McClelland, David C. ed. *Studies in Motivation*. New York: Appleton-Century-Crofts, 1955.

A textbook.

McClelland, David C., Atkinson, John W., Clark, Russell A., and Lowell,

Edgar L. *The Achievement Motive*. New York: Appleton-Century-Crofts, 1953.

A summary of research on measuring and arousing the achievement motive, and examining the resulting behavior.

McClenahan, Bessir Averno, "Social Causes of Decline in Neighborhoods," *Social Forces*, May, 1942.

Interviews with 650 residents of a Los Angeles neighborhood which was undergoing invasion by ethnic minorities, asking reasons for moving under conditions of neighborhood change.

McKain, Walter C., Jr., and Baldwin, Elmer D. *Old Age and Retirement in Rural Connecticut*, One: *East Hadam: A Summer Resort Community*. Storrs, Conn., June, 1951. (University of Connecticut, Storrs Agricultural Experiment Station Bulletin 278.)

Tried to interview everyone over 65 in the town, and interviewed 220. Data on activities, sources of income, and reasons for retirement. Most retired because of illness, accident, or unemployment, i.e., involuntarily.

McKain, Walter C., Jr., Baldwin, Elmer D., and Ducoff, Louis J. *Old Age and Retirement in Rural Connecticut*, Two: *Economic Security of Farm Operators and Farm Laborers*. Storrs, Conn., June, 1953. (University of Connecticut, Storrs Agricultural Experiment Station, Bulletin 299.)

Attitudes toward security in farming, expected sources of income in old age, accumulated resources, consideration given to retirement (very little). Very few expect to retire. Interviews from a sample drawn by BAE, 383 with operators, 123 with regular farm workers and 86 with employers of farm workers.

McKenna, Joseph Perry, *The Demand*

- for *Durable Consumer Goods*, Ph.D. thesis. Cambridge, Mass.: Harvard University, 1950.
- McKerley, John P. *Buying Habits of Selected Milwaukee Consumers When Purchasing Television Sets*, Master's thesis. Madison, Wisconsin: University of Wisconsin, 1955.
- Maccoby, Eleanor E., and Fielder, Frances. *Savings Among Upper-Income Families in Puerto Rico*. Rio Piedras: University of Puerto Rico Press, 1953.
- Mack, Ruth P. "The Direction of Change in Income and the Consumption Function," *Review of Economics and Statistics*, XXX (November, 1948), 239-58.
- Points out that in a cross section study some people are temporarily in high or low income groups, so that a simple consumption-income relation will understate the true marginal propensity to consume.
- Mack, Ruth. "Economics of Consumption," in *A Survey of Contemporary Economics*, II. Homewood, Ill.: Richard D. Irwin, Inc., 1952.
- A review article concentrating on the dynamics of aggregate consumer buying and saving in the United States.
- Mack, Ruth. *Factors Influencing Consumption: An Experimental Analysis of Shoe Buying*. New York: National Bureau of Economic Research, 1954. (Technical Paper 10.)
- An aggregate statistical study.
- Madge, Charles. *War-Time Pattern of Saving and Spending*. Cambridge, England: Cambridge University Press, 1943. (National Institute of Economic and Social Research, Occasional Papers IV).
- Interviews in Leeds and Glasgow, with a random sample but low completion rate. Leeds data on saving and expenditures from 715 interviews, and for a smaller group of 102 from subsequent records kept by respondents for two weeks. Samples excluded professionals, proprietors, shopkeepers and small traders. Information about husband-wife control over money, and deception of wife as to husband's earnings. Older study but included because of descriptive detail. Also attitude comparisons of high versus low savers.
- Magnus, E. "Net Worth of Old Age and Survivors' Insurance Beneficiaries," *Social Security Bulletin*, X (1947), 12-27.
- Maier, Frank H., "Consumer Demand for Cigarettes Estimated from State Data," *Journal of Farm Economics*, XXXVII (November, 1955), 690-704.
- A cross-section analysis of state data for each of 5 years.
- Malmquist, Sten. *A Statistical Analysis of the Demand for Liquor in Sweden: A Study of the Demand for a Rationed Commodity*. Uppsala, Sweden: Appelbergs Boktryckeri AB, 1948.
- Methodologically interesting.
- Manley, Charles R. "The Migration of Older People," *American Journal of Sociology*, LIX (January, 1954), 324-31.
- Personnel records of a large metropolitan department store were used to relate retirement income, pre-retirement suburb location, etc. to migration. Thirty-four retired migrants and 189 retired nonmigrants were studied.
- March, James G. "Husband-Wife Interaction Over Political Issues," *Public Opinion Quarterly*, XVII (Winter, 1953-1954), 461-70.
- A study using a variation of the Strodtbeck system, with members of League of Women Voters, using Bales categories, 8 couples. Husbands contributed a larger share of opinion-giving and orientation-

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giving remarks in the discussion of labor policy questions than to foreign policy, and more to the latter than to local policy questions. (Question whether this applies to all or only to members of the League, which concentrates on local and foreign policy issues.)

March, James G. "Influence Measurement in Experimental and Semi-Experimental Groups," *Sociometry*, December, 1957, 260-70.

Laboratory studies of undergraduates using the Bales system for scoring interaction indicate the difficulties of measuring influence even in laboratory situations. There were differences between groups of strangers and groups of friends. Different measures of influence gave different results.

Market Research Corporation of America. *Inventory of Historical Data Collected from the National Consumer Panel of the Market Research Corporation of America*. New York: Market Research Corporation of America, no date.

A catalogue of data which could be made available for research studies, at some cost.

Market Research Corporation of America. *The National Consumer Panel*. New York: Market Research Corporation (circa 1955).

A description of their consumer panel, begun in 1941 and being converted to one of "known probability selection" since 1950 but gradually. Monthly reports from some 5800 families.

Marshak, Jacob. "Money Illusion and Demand Analysis," *Review of Economics and Statistics*, XXV (February, 1943), 40-48.

Differences between cross-section and time-series spending-income regressions. One of the first at-

tempts to use both time-series and cross-section data.

Martineau, Pierre, *Motivation in Advertising*, New York: McGraw-Hill, 1957.

Theories of buyer motivation with qualitative evidence from various (mostly unpublished) studies.

Mass-Observation. *People's Homes, A Study for the Advertising Service Guild*. London: The Curwen Press, Ltd., 1943.

A fascinating detailed interview and observation study of how British use and feel about their homes.

Mather, William G., Whitman, Lauris B., Ayers, Mary E., and Samson, Adelbert P. *Family Factors Influencing Corrective Action Following School Health Examination*. University Park: Pa.: Pennsylvania State College, Agricultural Experiment Station, March, 1955. (Bulletin 589.)

A study through interviews with parents of 471 children with medical defects and 1082 with dental defects, relating action to income, education, number of children, rural location, and personal contact with school nurse.

Mauser, Ferdinand F., and Brown, James H. *Detroit's Senior Citizens—Their Viewpoints and Attitudes. A Research Study, Facts and Information about Detroiters over Age 65*. Detroit, Mich.: Wayne University, School of Business Administration, Department of Marketing, February, 1955.

A study from records of where 502 pensioners of Michigan Bell Telephone Company and 13,318 pensioners of UAW-CIO moved after retirement (largest group moved to other locations in Michigan, if they moved at all, and the next largest moved to Florida, next California). Interviews with 114 Detroiters over 65 years of age, names secured from

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social agencies, churches, pension rolls etc., i.e., not a sample as such. Information on attitudes, living arrangements, changes in patterns of living, income source size and problems, general satisfactions and dissatisfactions.

Mayo, Selz C., and Fullerton, Kie Sebastian. *Medical Care in Greene County*. Raleigh, N.C., November, 1948. (North Carolina State College Agricultural Experiment Station Bulletin 363.)

Describes where got medical care, how financed, etc. in 266 households. Used both indirect measures (army rejections) and "symptoms analysis" to measure unmet medical care needs.

Meinken, Kenneth W. *The Demand and Price Structure for Wheat*. Washington, DC, 1955. (US Department of Agriculture, Technical Bulletin 1136.)

Mendershausen, Horst. "Differences in Family Savings between Cities of Different Size and Location, Whites and Negroes," *Review of Economics and Statistics*, XXII (August, 1940), 122-35.

Merchant, C. H. "Consumer Acceptance of Potatoes of Various Qualities." *American Potato Journal* XXXII (1955), 189-91.

Meredith Publishing Company, Research Division. *A Study of Reader-ship Impact of the Reynolds Metals Company Advertisement in the April, 1955 Issue of Better Homes and Gardens*. Des Moines, Iowa: Meredith Publishing Company, 1955.

Interviews with "a national cross-section sample" of 236 women readers and 195 men readers of *Better Homes and Gardens*, field work by Miles Shepard. A study of whether readers can recall the ad.

Meredith Publishing Company, Re-

search Division. *The Attitudes, Motives, Behaviors, of Subscribers to Better Homes and Gardens*. April, 1952. Des Moines, Iowa: Meredith Publishing Company, 1953.

Largely verbatim quotation from report of Burleigh Gardner (Social Research, Inc.) to Meredith, and the report is almost entirely quotations from some 200 interviews with metropolitan Chicago subscribers.

Meredith Publishing Company, Research Division. *Better Homes and Gardens Television Survey, May, 1955*. Des Moines, Iowa: Meredith Publishing Company, May, 1955 (processed).

Questionnaires mailed to 620 *Better Homes and Gardens* families with children under 18 and TV. 75% replied, so number was 467. Use, general preferences for types of programs by each member of family, effect on children, and some sentence completion like "People who plan television programs ought to. . . ." answered separately by husband and wife. Wide differences on preferred and least preferred programs, otherwise not many differences.

Meredith Publishing Company, Research Division. *Behind the Blueprints*. Des Moines, Iowa: Meredith Publishing Company, 1946.

A mail survey of 4900 *Better Homes and Gardens* families who planned to build new homes.

Meredith Publishing Company, Research Division. *Building and Buying Action*. Des Moines, Iowa: Meredith Publishing Company, circa 1954.

A report on the home building, home-improvement and buying activities of *Better Homes and Gardens* families. Their building and buying action during the past three years, and their plans for the

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coming year. One of a large number of studies of the activities and interests of readers of *Better Homes and Gardens*. Similar studies have been made of readers of *Successful Farming*. 1518 returned mail questionnaires, representing a high response rate from a special population.

Meredith Publishing Company, Research Division. *Home Owner's Survey*. Des Moines, Iowa: Meredith Publishing Company, January, 1945.

A survey of 386 *Better Homes and Gardens* subscriber families who plan to build, buy, or remodel.

Meredith Publishing Company, Research Division. *The New House Next Door*. Des Moines, Iowa: Meredith Publishing Company, 1950.

Third in a series of four studies. Mailed questionnaire to *Better Homes and Gardens* subscribers who planned to build, buy or remodel—1418 replies.

Meredith Publishing Company, Research Division. *The New House Next Door*. Des Moines, Iowa: Meredith Publishing Company, 1955.

(A Joint study by *Better Homes and Gardens* and the F. W. Dodge Corporation). This is the fourth study in a series, others in 1941, 1945, and 1949; the 1949 one similar enough to make most tables in the 1955 report trend tables. Mailed questionnaire to a list of new home buyers, homes worth \$8000 or more—1192 replies.

Meredith Publishing Company, A 12-Months Study of *Better Homes and Gardens* Readers, Des Moines, Iowa: Meredith Publishing Company, 1956.

Study done by Politz, interviewing a probability sample with reinterviews in four waves three months apart. 7512 on first wave, 5448 were interviewed on all four waves. Mostly about whether they read

and use *Better Homes and Gardens*.

Merriam, Oreana. "How Young Families Spend Their Money," *Journal of Home Economics*, XLVII (May, 1955), 330-32.

Interviews with 193 wives in New Britain, Connecticut, 30 years old or less and married in 1950. Information on expenditures, equipment owned, and insurance carried.

Merton, Robert K. *Mass Persuasion*. New York: Harper & Brothers, 1946.

A careful and imaginative study of a single case of "mass persuasion"—Kate Smith's feat of selling \$39,000,000 in War Bonds over the air in a one-day marathon of broadcasting. Illustrates the use of focussed depth interviews combined with a public opinion poll.

Merton, Robert K. "The Social Psychology of Housing," in *Current Trends in Social Psychology*. Pittsburgh, Pa.: University of Pittsburgh Press, 1948.

Metzen, Edward J. "Consumer Information of Sixth Grade Student." Master's thesis. Minneapolis, Minn.: University of Minnesota, 1955.

Meyers, G. W. "Hospital Experience of a Government Hospital Care Insurance Plan," *Canadian Journal of Public Health*, XLV (October, 1954), 420-29.

A report on the Saskatchewan experience.

Meyers, Trienah. "Predicting Market Acceptance," *Journal of Farm Economics* (proceedings), XXXVIII (December, 1955).

Meyersohn, Rolf. *Annotated Bibliography of Television Research*. New York: Bureau of Applied Social Research, 1953 (processed, no copies available).

Middleton, Margaret G., "Family Expenditures in a Selected Middle Class Negro Group," Master's thesis.

- Washington, DC: Howard University, 1956.
- Miller, Daniel R., and Swanson, Guy E. *Conflict and Defense in the Child*. To be published by Henry Holt and Company.
- Studies in conflict resolution which may be relevant to economic choice.
- Miller, David F. *The Effects of Involvement in a Purchase Decision on Attitudes Toward Automobiles*. Ph.D. thesis. Ann Arbor, Michigan: University of Michigan, 1955.
- Data from mailings to National Family Opinion's panel.
- Miller, Donald L. "The Life Cycle and the Impact of Advertising," in *Consumer Behavior: Vol. II, The Life Cycle and Consumer Behavior*, Lincoln Clark, ed. New York: New York University Press, 1955.
- Some data from Burke Marketing Research showing that younger people are easier to switch to other brands, have less brand loyalty, are more willing to try something new.
- Miller, Henry L., Jr., "The Demand for Refrigerators: A Statistical Investigation of the Demand for a Consumers' Durable Good," Ph.D. thesis. Cambridge, Mass.: Harvard University, 1956.
- Miller, Patricia W. "Certain Aspects of the Clothing Habits of the Average Urban American Woman." Master's thesis. Norman, Okla.: University of Oklahoma, 1953.
- Milwaukee County Regional Planning Department. *Residential Development in the Unincorporated Areas of Milwaukee County*. Milwaukee, Wis.: Milwaukee County Regional Planning Department, 1946 (processed).
- Contains the results of a survey on reasons for moving.
- Minneapolis Star and Tribune, *Minnesota Homemaker Survey No. 6*, Minneapolis: Minneapolis Star and Tribune, 1956.
- "A home-interview study of products on hand and in use in Minnesota homes as of November, 1955, with particular emphasis on Minneapolis and Hennepin County." Not brand preferences, but brands on hand and in use, or last purchased. 1200 interviews.
- Modigliani, Franco, and Richard Brumberg. "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in *Post Keynesian Economics*. New Brunswick, N.J.: Rutgers University Press, 1954.
- Assumptions about consumer motivation lead to the conclusion that the proportion of income saved depends on lifetime average income and age, so that it will be constant except as short-term income changes or growth of earning capacity make accumulated savings out of line with current income and age. Suggestions for quantitative tests, but almost no empirical evidence adduced here.
- Monroe, Day, Pennell, Maryland Y., Pratt, Mary R., and DePuy, G. S. *Family Spending and Saving as Related to Age of Wife and Age and Number of Children*. Washington, DC: US Government Printing Office, 1942. (US Department of Agriculture Miscellaneous Publication 489.)
- Based on 1935-1936 data, first detailed spending data on a life cycle basis.
- Monsanto Chemical Company. *A Market Study on Facts About the Toy Market and a Plastic Toy Survey*. Springfield, Mass.: Monsanto Chemical Company, Market Development Department, 1955 (processed).
- Mail questionnaires sent out by Jane Blair of Gardner Advertising Agency to 1000 families with

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children 14 or under—83% replied, but this may have been a selected panel mailing. Toy buying habits, and attitudes toward plastic toys; people dislike hard plastic toys because they break, like bright colors and ease of cleaning.

Montgomery, James E. *Housing Preferences of Farm Families in the Northeast*. Ithaca, N.Y., July, 1951. (Cornell University Agricultural Experiment Station Bulletin 872.)

Preferences about, and uses of houses—40% didn't have a bathroom.

Mooney, Horace William. "Some Factors Associated with Negro-White Differentials." Ph.D. thesis, Ann Arbor, Mich.: University of Michigan, 1953.

Compares saving behavior, using data from Surveys of Consumer Finances, see also Klein and Mooney.

Moore, Denise Francq. "Roles and Attitudes Towards Their Roles of Selected Upper-Middle Class High School Students in Family Financial Management." Master's thesis. East Lansing, Mich.: Michigan State College 1953.

Moore, Erman N. *Purchasing Practices and Quality Recognition for Eggs*, Ithaca, New York. Ithaca, N.Y., 1952. (Cornell University Department of Agricultural Economics, Agricultural Experiment Station Bulletin 835.)

Moore, Mary Allison. "A Study of the Factors Influencing the Buying Practices of a Selected Group of Farm Women." Master's thesis. Denton, Texas: Texas State College for Women, 1949.

Moore, Underhill, and Callahan, Charles C. *Law and Learning Theory: A Study in Legal Control*. New Haven, Conn.: Yale Law Journal Company, 1943.

A study of the effects of parking limit signs with and without enforcement, on behavior.

Morey, Nancy Booker. *A Study of the Food Habits and Health of Farm Families in Tompkins County, New York*. Ithaca, N.Y., June, 1933. (Cornell Agricultural Experiment Station Bulletin 563.)

Morgan, James N., "Consumer Investment Expenditures," abstract in *Econometrica*, XXV (October, 1957), 602-03.

Data on consumer expenditures on cars, durables, and additions and repairs to homes, from seven surveys of consumer finances, are analyzed using a sequential procedure.

Morgan, James N. "Consumer Substitutions Between Butter and Margarine," *Econometrica*, XIX (January, 1951), 18-39.

Data on prices and sales from a Rhode Island supermarket chain during a period of wildly fluctuating prices.

Morgan, James N. "Individual Savings in 1947 and 1948," *American Economic Review*, XL (June, 1950), 381-88.

Points out differential movements in saving as between farmers, unincorporated businessmen, and pure consumers.

Morgan, James N. "The Motivations of Savers," in *Savings in the Modern Economy*. Minneapolis: University of Minnesota Press, 1953.

Morgan, James N. "The Structure of Aggregate Personal Saving," *Journal of Political Economy*, LIX (December, 1951), 528-34.

A note indicating that aggregate saving data may represent mainly the saving of farmers and unincorporated businessmen who have quite different patterns of saving from ordinary consumers. See also

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- "Correction and Addendum," *ibid*, LXI (December, 1953), 536.
- Morgan, Theodore. "The Economic Development of Ceylon," *Annals of the American Academy of Political and Social Science* (May, 1956) 93-100.
- Mentions some consumption and nutrition problems, as well as culturally distorted preferences for bookish occupations.
- Morse, Nancy C., and Weiss, Robert S. "The Function and Meaning of Work and the Job," *American Sociological Review*, XX (April, 1955), 191-98.
- Reports on attitudes of 401 in a national sample of employed men toward work, and finds that most men think they would work even if there were no economic necessity for it. Other data from this survey, e.g., the attitudes of the women in it, have not been published.
- Morse, Richard L. D. "Consumer Preferences for Canned Orange Juices of 12 to 22 Brix-Acid Ratios," *Proceedings of the Florida State Horticultural Society*, LXVII (October, 1954), 186-92.
- They prefer the middle range, are more consistent when they know which are which. Refers to one earlier report.
- Morse, Richard L. D. "Exploratory Studies of Preschool Children's Taste Discrimination and Reference for Selected Citrus Juices," *Proceedings of the Florida State Horticultural Society*, LXVI (1954), 292-301.
- Children can discriminate between orange and grapefruit juice, but not between orange and tangerine, or stale canned versus fresh juice. Some tended to choose the first of the pair tested, or in triples to pick the middle one as the different one.
- Mortenson, W. P., and Brandner, H. J. "Why a Consumer Buys Eggs," *Wisconsin Extension Service Review*, 1952. Madison, Wis., 1952.
- Mortenson, W. P., and Hayes, J. B. *Highlights of Survey of Consumers' Egg Preference*. Madison, Wis.: University of Wisconsin, 1946.
- Moser, Ada M., Watson, Elizabeth S., and Roach, Florence E. *Foods Used by Open Country Families, York County, South Carolina*. Clemson, S. C., June, 1955. (South Carolina Agricultural Experiment Station, Bulletin 428.)
- A study of 125 farm and 82 non-farm families, white, with a man and wife plus one or more children under 18 years of age, in a selected industrial Piedmont county. A descriptive study of food intake, home production of food, and dietary adequacy of food intake.
- Mueller, Eva, "The Effects of Consumer Attitudes on Purchases," *American Economic Review*, December, 1957, 946-65.
- Muth, Richard F., "The Demand for Non-Farm Housing", Abstract of a paper at September Econometric Meetings, Detroit, 1956. *Econometrica*, XXV (April, 1957), 365-66.
- Time series data, using deflated data, stock of housing, to get price and income elasticities.
- National Broadcasting Company. *Why Sales Come in Curves*. New York: National Broadcasting Company, 1953.
- A study of brand switching using a two-wave survey in four cities, shows a great deal of switching.
- National Family Opinion, Inc. *Dogs and Cats in the American Home, 1953 Population and Food Consumption*. New York: American Can Company, No date.
- Dogs, cats, and the use of canned

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pet food. Based on a postcard questionnaire mailed to four panels, 4000 completed returns, or 80% response to original (selected) mailing.

National Opinion Research Center. *Community Aspects of Aircraft Annoyance*. Chicago, Ill.: University of Chicago, 1954. (National Opinion Research Center, Report 54.)

3635 interviews, indicating that people hadn't expected their difficulties and did not think of moving away as the only solution.

National Opinion Research Center. *Public Attitudes Toward Prescription Costs and the Drug Industry*. New York: Health Information Foundation, October, 1955.

"Based on preliminary tabulations from the Summer, 1955 survey." A probability sample of US. Number of cases is 2163. Druggists and doctors mentioned by respondents were to be interviewed, 500 each. Some of these responses are given here too, but not for complete samples.

National Research Council. *Manual For The Study of Food Habits*. Washington, DC: National Research Council, January, 1945. (Bulletin 111.)

A guide for those interested in studying food consumption patterns. It describes the problems encountered and the results obtained by the Committee of Food Habits set up under the National Research Council in 1941.

National Science Foundation. *Quarterly Report, Government Sponsored and Government Supported Research—Social Science and Interdisciplinary Areas*. Washington, DC: National Science Foundation, issued quarterly (processed).

Nerlove, Marc, "A Note on Long-Run Automobile Demand," *Journal of*

Marketing, XXII (July, 1957), 57-64.

Criticizes Brem's article in April, 1956, as too simple. Mentions an unpublished manuscript of his own called "Distributed Lags and Demand Analysis." Considers the demand as a demand for stock adjusted for age and make, plus lags in reactions.

Netherlands Post Office Savings Bank, *Het Ptt-Bedrijf*, VIII (August, 1957). In Dutch.

A report on two studies, one of Post Office savings account holders and one of 4000 Dutch families (quota sample), on savings and methods of financing larger purchases.

Newman, Joseph W., *Motivation Research and Marketing Management*, Boston, Mass.: Harvard University Graduate School of Business Administration, 1957.

Includes friendly summaries, rare studies of motivation research not easily available elsewhere.

Newman, Joseph W. "Looking Around: Consumer Motivation Research," *Harvard Business Review*, XXXIII (January-February, 1955), 135-97. Cursory review article.

New York Port Authority, Aviation Department, *New York's Domestic Air Travelers*, New York: The Port Authority, October, 1957.

Report of a one year survey conducted in collaboration with the Domestic Schedules Airlines, November 1955 through October 1956. Questionnaires filled out in flight by a scientifically selected random sample of 30,000 passengers leaving Port of New York Authority airports. A sample of trips, not travelers, as to origin, destination, purpose, and some background information.

New York State, Consumer Counsel

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(Persia Campbell), *Milk Consumption Habits in the Greater New York Market*, September-October, 1955, Albany, New York: Consumer Counsel to the Governor, November, 1956.

A study done by Willard R. Simmons and Associates, interviewing 772 white, 714 Negro, and 712 Spanish-speaking households. Spanish-speaking households drank more milk in spite of lowest income, even holding age constant, except that whites under 18 drank more.

New York State, *People, Housing and Rent Control in Buffalo*, Albany, New York: Temporary State Housing Rent Commission, April, 1956.

New York State, *People, Housing and Rent Control in Schenectady*, Albany, New York: Temporary State Housing Rent Commission, January, 1957. (mimeo)

One of several studies—in Buffalo, Rochester, Albany, and Syracuse. Data collected by US Census Bureau in April, 1955, and compared with 1950 Census of Housing.

New York State, *People, Housing and Rent Control in Syracuse*, Albany, New York: Temporary State Housing Rent Commission, November, 1956.

New York University, Graduate School of Arts and Science, *Economic Abstracts*. 1952 to date.

New York University, School of Retailing, Research Division, "Ask Your Customers!" *Journal of Retailing*, XXVII (Fall, 1951), 123-31.

Students at NYU interviewed 1707 shoppers in the Fourteenth Street shopping district of New York City on their shopping habits.

Nickell, P., Budolfson, M., Liston, M., and Willis, E. *Farm Housing Needs and Preferences in the North Central Region*. Ames, Iowa, 1954. (Iowa State College Agricultural Experi-

ment Station, Research Bulletin 378.)

A study of 878 households.

Nolan, Francena L. *Factors Associated with Preferences for Household Equipment and Furniture by 351 Rural Families*. State College, Pa., January, 1955 (Pennsylvania State University College of Agriculture, Agricultural Experiment Station Bulletin 591.)

Homemakers were asked to assume someone had stolen all the household equipment and furniture, and to use the insurance money to select \$1200 worth of replacement from a list with prices. This was repeated assuming \$1800 to spend. Standing of the individuals in the community was rated by 13 community judges. Compares actual inventory with two proposed ones. Status seemed to have less to do with choices than rural-urban location. Sample included almost all the eligible families in the community who were willing to cooperate.

Nolan, F. L. "Preferences for Household Equipment and Furniture," *Science for the Farmer*, II (1954), 3.

Nolan, F. L., and John, M. E. *Use of Rooms in Farm Houses by 53 Pennsylvania Families*. State College, Pa., April, 1953. (Pennsylvania State College Agricultural Experiment Station Bulletin 566.)

Only a small proportion of those eligible were willing to keep records.

Nordin, J. A., Judge, George G., and Wahby, Omar. *Application of Econometric Procedures to the Demands for Agricultural Products*. Ames, Iowa, 1954. (Iowa State College Agricultural Experiment Station Research Bulletin 410.)

Norris, Ruby T. "Processes and Objectives in the New London Area," in *Consumer Behavior*, Vol. I: *The*

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Dynamics of Consumer Reaction, Lincoln Clark, ed. New York: New York University Press, 1954.

A personal interview study of 101 people who bought houses in the New London, Connecticut area between August 15, 1952 and April 24, 1953 (out of 185 cases sought). Main finding was that most people didn't hunt much or long, and reported few or no contenders for their attention before final purchase.

North Dakota Agricultural Experiment Station. *Consumer Acceptance of and Preferences for Potatoes*. Fargo, N.D., April, 1952. (North Dakota Agricultural College, Agricultural Experiment Station, Bulletin 374; North Central Regional Publication No. 24.)

Retail sales tests in Chicago, St. Louis, Lincoln. (Cites 10 unpublished reports, 4 published ones, with preferences for sizes, color, etc.). Also personal interviews in St. Louis and Lincoln. Summarizes results of a number of unpublished studies.

Nowland and Company. "Factors Influencing the Purchase of Saran Wrap." Unpublished, October, 1955.

Results of a study by Elrich, Lavidge Co. using 407 depth interviews in nine cities for Dow Chemical Company. Restricted.

Nutrition Society, "Symposium on the National Food Survey of Great Britain, 20 November, 1954," *Nutrition Society Proceedings*, 14:1:57-92.

Reports on studies made by J.A.C. Brown, "Economics, Nutrition, and Family Budgets," 63-78; A.H.J. Baines and Dorothy F. Hollingsworth, "The Diets of Elderly People Living Alone," 77-80; and Evelyn H. Gibson, W. L.

Reading and Grace M. Warnock, "Food and Family Sizes," 80-92.

Nybrotten, N., *Consumer Preferences For Poultry Meat*, West Virginia: West Virginia Agricultural Experiment Station Bulletin 389, 1956.

Ogren, Kenneth E. *An Analysis of Household Purchases of Citrus Products by 500 Urban Families, November 1948-October 1949*. Washington DC: US Bureau of Agricultural Economics, 1951. (Processed.)

Okun, Arthur M., *The Value of Anticipations Data in Forecasting National Product*. Paper presented at a Conference on the Quality and Economic Significance of Anticipations Data, New York: National Bureau of Economic Research, 1957. (Processed.)

Olds, James. "Physiological Mechanisms of Reward," *Nebraska Symposium on Motivation*, 1955. Lincoln, Nebr.: University of Nebraska Press, 1955.

In the words of one commentator, the work reported here represents "a major break through on the neuro-physiological front for psychologists." "Our speculations have led us to guess that there may be a reward system in the anterior and limbic parts of the brain, and a punishment system in the posterior reticular part". p. 124.

Olivo, Virginia Britton. "Case Studies of the Economic Experience of Selected Families During Their Life Span." Ph.D. thesis. Chicago, Ill.: University of Chicago, 1950.

Omaha World-Herald. *Consumer Analysis, 1956-12th Annual Survey of the Greater Omaha Market*. Omaha, Nebr.: The Omaha World-Herald, 1956.

Trends on brand preferences in the Omaha area, from a mailed questionnaire returned in person to col-

lect a free bag of groceries. Included here as an example of the type of study now being done by some 21 American newspapers and by others in Canada. More useful than *Consolidated Consumer Analysis* because individual newspaper reports carry long trends with similar methods.

Opinion Research Corporation. *The Public Appraises the Oil Industry*. Princeton, N. J.: Opinion Research Corporation, (December 7, 1953).

An Opinion Study for the Oil Industry Information Committee—2542 interviews. Availability uncertain.

Opinion Research Corporation. *Shopping and Travel Habits of Women in Suburban Philadelphia*. Princeton, N.J.: Opinion Research Corporation, 1955.

A report based on a survey conducted in April, 1955 for the Reading Company. Interviews with a "representative cross section" of women 21 or over not working and living in suburban communities served by Reading Railroad. Reasons for downtown shopping and for mode of travel. Number of interviews not given.

Oregon Agricultural Experiment Station. *Housing Needs of Western Farm Families*. Corvallis, Ore.: 1952. (Oregon Agricultural Experiment Station and others.) (Western Co-operative Series Research Report 1, by Woolrich and others.)

One of a number of reports on studies in four regions as to what people say they would like in a house.

Orshansky, Mollis, Blake, Ennis C., and Moss, Mary Ann. *Food Expenditures, Preservation and Home Production by Rural Families in the North Central Region 1951-52*. Washington, DC: US Government

Printing Office, August, 1956 (US Department of Agriculture, Agriculture Information Bulletin No. 113).

A survey by Iowa State College of 1152 rural households, 624 of them non-farm, in 12 North Central states. Mostly descriptive, with some data on relative importance of husband and wife in buying food.

Oxenfeldt, Alfred. "Consumer Knowledge: Its Measurement and Extent," *Review of Economics and Statistics*, XXXII (November, 1950), 300-14.

Concludes that consumers don't know much.

Paradise, L. M., and Blankenship, Albert B. "Depth Questioning," *Journal of Marketing*, XV (January, 1951), 274-88.

A critical review of the depth questionnaire, structured depth interview, and unstructured depth interview. Contains interesting historical material.

Paradiso, Louis J., "Classification of Consumer Expenditures by Income Elasticity," *Survey of Current Business*, XXV (January, 1945), 7-10.

Paradiso, Louis J., and Winston, Clement. "Consumer Expenditure-Income Patterns," *Survey of Current Business*, XXXV (September, 1955), 23-32.

Income sensitivity of consumption expenditures by categories over time.

Parents' Magazine. *What Kind of Homes Do Families with Children Want? Parents' Magazine's Home Building Study*, 1946. New York: Parents' Magazine, 1946.

A survey of 3,518 Parents' Magazine subscriber families.

Parents' Magazine, Research Department. *Parents' Magazine's Do-It-Yourself Survey*. New York: Parents' Magazine, 1954.

A study of the amount and kind of

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home projects done by *Parents' Magazine's* families with children, as compared to readers of other magazines. A questionnaire was mailed by Daniel Starch and Staff to 564 *Parents' Magazine* readers and 584 households that receive one or more other magazines but not *Parents' Magazine*. About half were returned. People with children (*Parents' Magazine* subscribers) are more likely to have home projects, more likely to do the work themselves, and still spend more on the average.

Parents' Magazine, Research Department. *Toy Buying Habits*. New York: *Parents' Magazine*, April, 1954 (processed).

Results of a questionnaire mailed to subscribers with a low response rate. Who bought what kind of toys and at what prices. One of a number of reports on *Parents' Magazine* subscribers.

Parker, Everett C., Barry, David W., and Smythe, Dallas W. *The Television-Radio Audience and Religion*. New York: Harper & Brothers, 1955.

A project of the National Council of Churches supervised by Yale Divinity School and Liston Pope. Analyzes content of programs, and listening habits of 3559 families. In addition reports a few (roughly 62) depth studies of listeners.

Parsons, T., and Bales, R. F. *Family, Socialization and Interaction Process*. Glencoe, Ill.: The Free Press, 1955.

See critical review by Nelson Foote in *Sociometry*, March, 1956. Bales and Slater have a chapter reporting role differentiation in problems solving groups (of students).

Paul, P. C., Bean, M., and Carlson, R. "Consumer Reasons for Selection of Certain Produce Items," *Michigan Agricultural Experiment Station*

Quarterly Bulletin XXXVII (1955), 539-48.

Paxton, Edward T. *What People Want When They Buy a House: A Guide For Architects and Builders*. Washington, DC: US Government Printing Office, 1955.

Interviews with 985 recent buyers of homes from a probability sample of deeds of transfer, from 1950 Survey Research Center study, with added data from numerous other sources. Reader must watch sources of data carefully. Reports on what people wanted in a house, what they got, and their attitudes toward their recently purchased houses. They wanted bigger and more one-floor houses than they got.

Pennock, Jean L., and Angle, Grace M. *What Farm Families Spend for Medical Care*. Washington, DC: US Government Printing Office, 1945. (Department of Agriculture Miscellaneous Publication 561.)

Based on 1941 study of family spending and saving in wartime by BLS.

Pennock, Jean L., Brew, Margaret L., and Tillinghast, Rose C. *Farm Family Spending and Saving in Illinois, with a Comparison of Survey and Home-Accounts Data*. Washington, DC: US Government Printing Office, 1954. (US Department of Agriculture Information Bulletin 101.)

A statistical and methodological report.

Pennock, J. L., and Speer, E. L. *Changes in Rural Family Income and Spending in Tennessee, 1943-1944*. Knoxville, Tenn., 1949. (US Department of Agriculture and University of Tennessee, USDA Miscellaneous Publication 666.)

Peryam, D. R., and Gutman, N. J. "Variations in Preference Ratings for Foods Served at Meals," *Food Technology*, IX (May, 1955), 31.

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Politz, Alfred, Research, Inc. *Highlights Study No. 3, Public Attitudes and Uses of Dairy Products*. Chicago, Ill.: American Dairy Association, 1954.

3813 interviews in fall of 1954 with a probability sample of the nation. Somewhat different material from No. 4.

Politz, Alfred, Research, Inc. *Highlights Study No. 4, Public Attitudes and Uses of Dairy Products*. Chicago, Ill.: American Dairy Association, 1955.

The fourth study on this subject. This one 3881 interviews with a national probability sample, with adjustment for not-at-homes. Some different material from Study No. 3.

Politz, Alfred, Research, Inc. *Survey of US Markets*, 1956. A National Survey Sponsored by *Look Magazine*. No date or place (presumably 1956, Politz, New York.)

Attitude and purchase plan data similar to Survey Research Center data but with different sampling unit and method.

Politz, Alfred, Research, Inc. *A Year in the Better Homes of America*. Des Moines, Iowa: Meredith Publishing Company, 1956.

A series of leapfrog reinterviews at three month intervals. Three interviews each with 7512 respondents in a national cross section. Largely a readership study.

Port of New York Authority. *New York's Domestic Air Travelers, Winter 1955-56*. New York: Forecast and Analysis Division, Aviation Department, New York Port Authority, July, 1956.

Report of a survey conducted in collaboration with the domestic scheduled airlines. Short questionnaires were filled out in flight by a carefully designed representative sample of 6881 adult passengers. Data on origin, destination, and purpose of trip.

Postman, Leo J. "The Experimental Analysis of Motivational Factors In Perception," in *Current Theory and Research in Motivation, A Symposium*. Lincoln, Nebr.: University of Nebraska Press, 1953.

A review article on studies of the effects of motivation on perception.

Powell, L. A., and Godwin, Marshall R. *Economic Relationships Involved in Retailing Citrus Products*. Gainesville, Fla.: University of Florida Agricultural Experiment Station, August, 1955.

A study of substitution relations between various citrus products.

Prairie Farmer, Research Department. "1947 Buying Requirements of Illinois and Indiana Farm Families," *Prairie Farmer*, January, 1947.

A survey of 583 Illinois and Indiana *Prairie Farmer* subscriber families to determine building and equipment plans.

Prais, S. J. "The Estimation of Equivalent Scales from Family Budgets," *Economic Journal*, LXIII (December, 1953), 791-810.

Develops a method for estimating simultaneously equivalent adult scales and the income elasticity of expenditure, and provides some examples of results.

Prais, S. J. "Non-Linear Estimates of the Engel Curves," *Review of Economic Studies*, XX (February, 1953), 87-104.

A methodological study using some actual data to show a method of handling differences in quality of food consumed as income increases.

Prais, S. J., and Houthakker, H. S. *The Analysis of Family Budgets, With an Application to Two British Surveys Conducted in 1937-39 and Their Detailed Results*. Cambridge, England: Cambridge University Press, 1955.

A sophisticated analysis of some older data, using income and house-

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hold size to explain expenditure on classes of items.

Prest, A. R. "Some Experiments in Demand Analysis," *Review of Economics and Statistics*, XXXI (February, 1949), 33-49.

A number of correlations.

Prevey, Esther. "A Quantitative Study of Family Practices in Training Children in the Use of Money," *Journal of Educational Psychology*, XXXVI (October, 1945), 411-28.

A study of 100 high school seniors (half of them boys) living with both parents, and from upper socioeconomic status families, as to mothers' reports on training of their children in money handling, and four years later by mail on money handling habits of the children.

Prewitt, Clemoth E. "A Survey of the Consumption of Poultry and Eggs by the Negro Population of Columbus, Ohio, in 1948-49." Unpublished Master's thesis, Ohio State University, 1949.

Psychological Corporation. *Beer Consumption in the American Home, 1947-1955*. New York: American Can Company, 1955.

Based on personal interview surveys in 1947, 1950, 1952, and 1955, 5000 housewives and 5000 male household heads in each study, plus 1,200 additional in metropolitan areas in 1955. Urban only, neighborhoods selected by probability sampling, but no further detail on sampling. Data on proportion of people using, type and size containers, quantity bought. Cans versus bottles.

Psychological Corporation. *Fruit and Vegetable Juice Servings in Urban American Homes, 1950-1953*. New York: American Can Company, no date.

The fourth in an annual series on this subject, each based on 10,000

home calls. Urban only, with some control over selection of neighborhoods by interviewers. Trends in consumption of juices.

"Public's Blueprint of Kind of Home It Wants," *American Builder*, October, 1950, 135-37.

Statistics taken from survey made by Homograf Planner Corporation, Detroit, Michigan. Size of sample not given.

Puck, The Comic Weekly. *The Sunday Comics, Some Advertising Implications*. New York: Puck, The Comic Weekly, 1956.

Summary and implications of a study by Science Research Associates—see the latter in bibliography—but with some quantitative data not in the larger report.

Puerto Rico, Department of Labor. *Survey of Incomes and Expenditures of Wage Earners' Families in Puerto Rico in 1952*. San Juan, P. R.: Department of Labor, October 28, 1954 (processed).

Quackenbush, G. G., and Shaffer, J. D. "Competitive Relationships of Fluid Skim Milk and Fluid Whole Milk," *Quarterly Bulletin*, XXXVIII (August, 1955), 110-22 (Michigan Agricultural Experiment Station.)

Data from MSU Consumer Panel (Report No. 15). Study of families that at first consistently didn't buy skim milk, then consistently did, and the reverse. Using skim was associated with greater total consumption of milk.

Quackenbush, G. G., and Shaffer, J. D. *Factors Affecting Purchases of Ice Cream for Home Use*. East Lansing, Mich., April, 1955. (Michigan State College Agricultural Experiment Station, Consumer Panel Bulletin No. 2, Technical Bulletin 249.)

Panel of some 240, but only used 128 families who reported 50 or more weeks in 1952. Home use was

affected by changes in temperature, incomes, and prices. (Multiple correlation.) For the calendar year, a regression using income, number in the household, and age of homemaker "failed to provide reliable coefficients."

Radke, M., and Caso, E. K. "Lecture and Discussion-Decision as Influencing Food Habits," *Journal of the American Dietetic Association*, XXIV (January, 1948), 23-31.

Radke, M., and Klisurich, D. "Experiments in Changing Food Habits," *Journal of the American Dietetic Association*, XXIII (May, 1947), 403-9.

A study of the relative effectiveness of group decision versus lecture.

Ramond, C. K., Rachal, L. H., and Marks, M. R. "Brand Discrimination Among Cigarette Smokers," *Journal of Applied Psychology*, XXXIV (August, 1950), 282-84.

Rayburn, Martee Breland. "Some Money Management Practices of Selected Rural Families in Mississippi," Master's thesis. University, Mississippi: University of Mississippi, 1956.

Raninen, Huugo, "The Consumer's Motives in Choosing His Regular Shop," Jakaja: Liiketaloustieteellinen Tutkimuslaitos, 1951.

Reed, R. H., and Creek, R. C. *Family Consumption of Certain Fresh Vegetables in Honolulu*. Territory of Hawaii: Hawaii Agricultural Experiment Station, 1953. (Bulletin 5.)

Reher, William C. "A Cross-Section Analysis of Contractual Saving," Ph.D. thesis. Ann Arbor, Michigan: University of Michigan, 1957.

Uses data from the Surveys of Consumer Finances.

Reid, M. G. "Survey of Ceylon's Consumer Finances," *American Economic Review*, XLVI (December, 1956), 956-64.

A review article.

Reid, Margaret G., and Dunsing, Marilyn. "Effect of Variability of Incomes on Level of Income-Expenditure Curves of Farm Families," *Review of Economics and Statistics*, XXXVIII (February, 1956), 90-95.

"Relevant Considerations in Recent House Purchases," *Journal of the American Institute of Planners*, XXI (Winter, 1955), 9-16.

A summary of findings from a Survey Research Center study, see also Paxton.

"Relevant Considerations in Recent House Purchases," *Journal of the American Institute of Appraisers*, Spring, 1955.

Summary report of a survey of 985 recent buyers by the Survey Research Center. See Paxton.

Report on the Sample Survey of Ceylon's Consumer Finances. Colombo: Central Bank of Ceylon, 1954.

See above review by M. G. Reid.

Revzan, David A. *A Comprehensive Classified Marketing Bibliography*. 3 vols. Berkeley, Calif.: University of California Press, 1951.

Almost entirely material on marketing rather than on the consumer as such.

Riemer, Svend. "A Research Note on Sociological Home Planning," *American Journal of Sociology*, XLVI (May, 1941), 865-72.

A survey of 200 Swedish families to determine living habits.

Riemer, Svend. "Livability—A New Factor on Home Value," *The Appraisal Journal*, April, 1946.

A survey of 400 Seattle families.

Riemer, Svend. "Maladjustment to the Family Home," *American Sociological Review*, X (1945), 642-48.

Interviews with 300 subjects on sources of annoyance in their homes.

Riley, Harold M. "Some Measurements of Consumer Demand for Meats."

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- Unpublished Ph.D. thesis, Michigan State College, 1954.
- Riley, H. M., and Kramer, R. C. *What Consumers Are Saying About Pre-packaged Fresh and Frozen Meats*. East Lansing, Mich., December, 1955. (Michigan State University Agricultural Experiment Station Special Bulletin 406.)
- Mail questionnaires in Flint and Grand Rapids, in 1951 and 1955. There was, in 1951, a 33% response, i.e., 2363 cases; in 1955 a 51% response, i.e., 3982 answers. Random original selection from city directories. In 1951, follow up of nonresponse showed no marked differences, except those who answered had slightly higher income and educational level. The 1955 subsample was contacted by telephone for additional information on meat buying. Preference was for fresh meat not prepackaged or frozen. Liked to be sure it was fresh, but also liked time saving from prepackaging.
- Roberts, Lydia J., and Stefani, Rosa Luisa. *Patterns of Living in Puerto Rican Families*. Rio Piedras, P. R.: The University of Puerto Rico, 1949.
- "... It is a matter of common knowledge that some housewives keep the refrigerator in the dining room because it is the best and often the most important piece of equipment or furniture in the house." P. 65.
- Rogers, Curtis C. *Bench Marks for the Next Five Years in Grocery Selling*. New York: Market Research Corporation of America, 1955.
- An address to the National-American Wholesale Grocers Association at Colorado Springs, September 13, 1955. Data on grocery shopping habits (nothing said about source or methods). Chains versus independent stores, day of the week, store loyalty, national brands. Store loyalty is "shown" to be less than most people think, in terms of whether successive purchases of same item are at same store.
- Rojko, Anthony S. "An Application of the Use of Economic Models to the Dairy Industry," *Journal of Farm Economics*, XXV (1953), 834-49.
- Rojko, Anthony S. *The Demand and Price Structure for Dairy Products*, Washington, DC: US Department of Agriculture, 1957. (Technical Bulletin No. 1168.)
- Statistical studies of factors affecting prices and consumption of milk products using annual Aggregate data.
- Rollins, Mabel A. "How Farm Families Are Meeting the Cost-Price Squeeze ... Situation of New York Families," *Journal of Home Economics*, XLVI (January, 1954), 7-8.
- Interviews but no sample.
- Rollins, Mabel A. *Installment Credit in the Sale of Washing Machines*. Ithaca, N.Y., November, 1940. (Cornell University Agricultural Experiment Station, Bulletin 743.)
- A study of retail stores, not directly of consumers, with some information on reasons for repurchases.
- Roos, C. F., and von Szelski, Victor. "Factors Governing Changes in Domestic Automobile Demand," *The Organics of Automobile Demand*, General Motors Corporation, 1939, pp. 20-95.
- Rosenberg, Morris. "Factors Influencing Change of Occupational Choice," in *The Language of Social Research*, Glencoe, Ill.: The Free Press, 1955.
- Interviews in 1950 and again in 1952 of 712 students showed a trend toward increased consistency between values and occupational choice, partly by change in values and partly by change in occupational choice.
- Rosencranz, M. L. L. "A Study of Women's Interest in Clothing,"

- Journal of Home Economics*, XLI (1949), 460-62.
- Rosner, Ann. "A Survey of Clothing Preferences and Buying Practices of 100 Girls of Roosevelt High School in Chicago, Illinois." Master's thesis. East Lansing, Mich.: Michigan State University, 1954.
- Rosow, Irving. "Home Ownership Motives," *American Sociological Review*, XIII (December, 1948), 751-56.
- Rossi, Peter H. *Why Families Move*. Glencoe, Ill.: The Free Press, 1955.
- A study in the social psychology of urban residential mobility sponsored by the Bureau of Applied Social Research and the Institute for Urban Land Use and Housing Studies of Columbia University. Done in Philadelphia, by personal interview with a follow-up. Most analysis is of 273 voluntary movers. See summary article in *The Language of Social Research*. Glencoe: The Free Press, 1955.
- Rousseas, S. W., and Hart, A. G. "Experimental Verification of a Composite Indifference Map," *Journal of Political Economy*, LIX (August, 1951), 288-318.
- Royster, Florence L. "A Study of Buying Practices of Selected College Women Enrolled in Oklahoma Agricultural and Mechanical College." Master's thesis. Stillwater, Okla.: Oklahoma A and M, 1952.
- Rundquist, E. A., and Sletto, R. F. *Personality in the Depression, A Study in the Measurement of Attitudes*. Minneapolis, Minn.: University of Minnesota Press, 1936.
- Ryan, Mary S. "A Study of Factors in the Selection and Care of Blouses Which Relate to Consumer Satisfaction," *Journal of Home Economics*, XLVI (March, 1954), 149-54.
- Interviews with 309 women on ownership, purchase, care of, and attitudes toward blouses of different fabrics and styles.
- Sackman, Louis. "New Standards in Apartment Planning," *Architectural Record* (August, 1941), 67-72.
- A survey of adjustment experiences of 139 families in several public-housing projects in New York City.
- Sackrin, S. M. "Income Elasticity of Demand for Cigarettes: A Cross Section Analysis," *Agricultural Economics Research*, IX (January, 1957), 1-9.
- CPS Survey of 40,000 people in February, 1955, and in April, 1955, income data for ¾ of them. Analysis is based on grouped data (weighted) using age and income.
- The St. Paul Dispatch-Pioneer Press, 1956 *Consumer Analysis, 10th Annual Survey, An Accurate Picture of the St. Paul Market*, St. Paul, Minnesota: The St. Paul Dispatch-Pioneer Press, 1956.
- Questionnaires filled out and returned in person by 3,000 people who received free groceries for their trouble, after the forms were checked for completeness. Second mailing was "loaded" to offset differential responses by districts from the first mailing. Brand preferences.
- Samson, A'Delbert P., and Mather, William G. *Personal and Social Adjustments of 49 Retired Rural Men*. State College, Pa., January, 1950. (Pennsylvania State College, Agricultural Experiment Station Progress Report 19.)
- Most had not planned to retire.
- Sandberg, Moshe, "Gross Personal Saving in 1954," *Bank of Israel Bulletin*, August, 1957.
- Data from the Survey of Consumer Finances in 1954. A summary of two fuller but unpublished reports.
- Saturday Evening Post Research Department. *Urban Housing Survey*. Philadelphia: Curtis Publishing Company, November, 1946.
- A survey of 4007 families from the general population, of which 60%

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were renters and 40% were homeowners.

Schaefer, William C. "Determination of Soldier Wants," *Symposium on Measurement of Consumer Wants*, Philadelphia: American Society for Testing Materials, 1952. (Special Technical Publication 117.)

Mostly on methods used on foods.

Schlapkoff, Doretta, and Burema, Jeanetta P. "Home Production by Farm Families in Nebraska County," *Journal of Home Economics*, XLVII (June, 1955), 400-4.

Interviews with 82 households in Cass County, Nebraska in the spring of 1952.

Schauffler, Mary. "The Suburbs of Cleveland," Ph.D. thesis. Chicago, Ill.: University of Chicago, 1941.

Questionnaire study of suburbanites.

Schuler, Edgar A., and Swiger, Rachel R. *Trends in Farm Family Levels and Standards of Living*. Washington, DC: August, 1947. (US Department of Agriculture, Bureau of Agricultural Economics.)

Schultz, Henry. *The Theory and Measurement of Demand*. Chicago: University of Chicago Press, 1938.

A classic, included here for old times' sake. Statistical studies using aggregate data.

Schultz, Theodore. *The Economic Organization of Agriculture*. New York: McGraw-Hill Book Co., 1953.

Chapter Five is on income elasticities.

Schweiger, Irving. "The Contribution of Consumer Anticipations in Forecasting Consumer Demand," in *Short Term Economic Forecasting; Studies in Income and Wealth*, XVII. Princeton, N.J.: Princeton University Press, 1955.

A review of the relation between consumer anticipations and subsequent aggregate consumer behavior, finding the anticipations data

from the Surveys of Consumer Finances useful.

Schweiger, Irving. *Some Factors Affecting Saving of Different Groups*. New York: National Bureau of Economic Research, 1955 (processed).

Paper given at Conference on Consumption and Economic Development. Based on cross section data from surveys of consumer finances.

Science Research Associates. *The Sunday Comics, A Socio-Psychological Study with Attendant Advertising Implications*. New York: Puck, The Comic Weekley, 1956.

This and a summary published by Puck available for limited distribution to serious readers. There are 120 intensive case studies, with many quotations, in Chicago. Two to five interviews each. Highly stratified selection. A number of the cases have been reproduced and are used in Professor Harper Boyd's marketing classes at Northwestern. Some data on an original sample of 700 from which the cases were selected for intensive interviewing.

Scott, R. C. *An Analysis of Frozen Food Purchases in Three New York Areas*. Ithaca, N.Y., September, 1950. (Cornell University Agricultural Experiment Station Bulletin 861.)

A dissertation. Surveys in Trumansburg, Syracuse, and Ithaca. Data on purchases, and use. Used rent level per capita as economic indicator.

Segal, Walter. *Home and Environment*. London: Leonard Hill Ltd., 1948.

Excellent study of housing details and needs, with suggestions for types of housing to meet them.

Seltzer, R. E. *Consumer Preference for Beef, Phoenix, Arizona Survey*, 1955. Tuscon, Ariz., October, 1955. (University of Arizona Agricultural Experiment Station Bulletin 267.)

This is part one, reporting what housewives say they want. Part two

later will offer it for sale to see what they actually select. Similar work is going on at Denver, Houston, Washington State College, and the University of California. There are 491 interviews from a complete list of dwelling units stratified by zone and clustered three to a cluster.

Settle, Mary Barnes. "Gains and Goals in Housing and Home Equipment of a Selected Group of Indiana and Michigan Families." Master's thesis. Lafayette, Ind.: Purdue University, 1948.

Sewell, William H., Ramsey, Charles E., and Ducoff, Louis J. *Farmers' Conceptions and Plans for Economic Security in Old Age*. Madison, Wis., September, 1953. (University of Wisconsin, Agricultural Experiment Station Bulletin 182.)

Interviews with 658 farmers in two economic regions of Wisconsin, on net worth, age, retirement plans, insurance, and attitudes on Social Security.

Shaffer, J. D., and Quackenbush, G. G. *Consumer Purchases of Apples*. East Lansing, Mich., December, 1955. (Michigan State University Agricultural Experiment Station, Special Bulletin 405.)

Shaffer, J. D., and Quackenbush, G. G. *Consumer Purchases of Butter and Oleomargarine*. East Lansing, Mich., April, 1955. (Michigan State College Agricultural Experiment Station Technical Bulletin 248; Michigan State Consumer Panel Bulletin 1.)

Panel is approximately 250 families "selected to be representative of a Michigan city of about 100,000 population." Panel reports weekly on quantity, price, and expenditure of items purchased for home consumption. Data on attitudes toward butter and oleo (63% thought butter had more food

value, 87% thought it tasted better). In a multiple correlation, only income per capita was significant in explaining per capita expenditure on butter, not size of family or age of homemaker.

Shaffer, Paul, and Wischkaemper, Paul. *Cost and Sales Results of Alternative Methods of Handling Bananas at Retail*, Washington, DC: US Department of Agriculture, October, 1956. (AMS-149.)

Analyzes five methods of preparing bananas at retail in terms of their effects upon labor costs, material costs, and costs of consumer damage to bananas. Analyzes two of the five methods in terms of their effects upon sales volume. Data were collected in seven stores.

Sharp, Harry, and Mott, Paul. "Consumer Decisions in the Metropolitan Family," *Journal of Marketing*, XXI (October, 1956), 149-56.

Data from the Detroit Area Study on who in the family makes certain decisions.

Sharp, Harry, and Mott, Paul. *Consumer Decisions in the Urban Family*. Ann Arbor, Mich., May, 1956. (Detroit Area Study, University of Michigan Survey Research Center, processed.)

Interviews with a probability sample of 727 in Detroit asking who made the decisions in the family for specific types of things such as purchase of a car, life insurance, allocation of food expenditure, selection of house or apartment, selection of place for vacation, decision whether wife should work. Results were related to income, but not to age of wife.

Shenk, Norma Naomi. "A Study of Clothing Consumption for a Selected Group of San Francisco Families." Master's thesis. Berkeley, Calif.: University of California, 1949.

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- Shepherd, Geoffrey. *Changes in the Demand for Meat and Dairy Products in the United States Since 1910*. Ames, Iowa, 1949. (Iowa Agricultural Experiment Station Research Bulletin 3-68.)
- Sheppard, D., and Carrinci, S. D. "A Survey of Housewives Attitudes to Dairy Products; III The Questions on Butter-Margarine," *Dairy Industry*, XX (July, 1955), 571-75.
- Sherriffs, Alex C. "The Intuition Questionnaire: A New Projective Test," *Journal of Abnormal and Social Psychology*, XLIII (July, 1948), 326-37. Small samples of behavior are presented to subjects, without meaningful context, and they are asked to give a probable explanation for the behavior. The method is adaptable to various situations.
- Shervini, Abdel A. (ed). "Marketing Aspects of Consumer Behavior Analysis." Ph.D. Thesis. Iowa City, Iowa: University of Iowa, 1950.
- Shores, Lois Nelson. "A System of Structural Equations Explaining The Demand for Food in the United States." Master's thesis. Chicago, Ill.: University of Chicago, 1946.
- Shreier, Fred T., and Wood, Albert J. "Motivational Analysis in Market Research," *Journal of Marketing*, XIII (October, 1948), 172-82. Describe techniques of a statistical nature which they have found useful in analyzing factors in consumer motivational studies.
- Shuffett, D. Milton. *The Demand and Price Structure for Selected Vegetables*. Washington, DC: US Government Printing Office, December, 1954. (US Department of Agriculture, Technical Bulletin 1105.) Statistical demand studies, with background information.
- Simmons, Will M. *Consumer Meat Purchases in Syracuse New York, 1948 and Comparison with 1942*. Ithaca, N.Y., June, 1951. (Cornell University Agricultural Experiment Station Bulletin 569.) High income families purchased 49% more meat per capita, paid 15% more per pound. Other factors related to consumption were size of family, nationality, religion, and activity of wage earner. One sample of 1099 in 1948 plus revisit of 726 addresses that had been visited in 1942 (see R. H. Anderson. *Consumer Demand for Meat*. Syracuse, New York, 1942. Cornell University Agricultural Experiment Station Bulletin 816 (March, 1945). Unbiased probability sample, call backs, for the 1099, and selective sample in 1942.
- Slocum, Walter L. *Occupational Planning by Undergraduates at the State College of Washington*. Pullman, Wash., February, 1954. (Washington State College Agricultural Experiment Station Bulletin 547, Rural Sociology Series on Youth No. 10.) A questionnaire with 40% return, plus interviews with 3% of non-response (used only 20% of the mail return). Then weighted, so unbiased. Number: 308 plus 95. Reasons: experience in field, study. Influenced most by parents, teachers, friends. Most important goals: interest (44), security (35), money (4). Low socioeconomic status associated with early choice of an occupation and job, but higher income families led to more certainty of choice. More evidence that selection is a developmental process involving a number of decisions over a period of years.
- Slocum, Walter L., and Swanson, Howard S. *Egg Consumption Habits, Purchasing Patterns and Preferences of Seattle Consumers*, 1954. Pullman, Wash., December, 1954. (Washington Agricultural Experiment Sta-

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tion, Institute of Agricultural Sciences, State College of Washington, Bulletin 556.)

Has a bibliography. There are 763 interviews with a probability sample. Sociological and economic background made little difference. Low brand consciousness. Shell color preferences (with comparative table showing brown preferred in Ithaca, Providence, Seattle, and Washington State, white elsewhere). Also yolk color preferences. Pretty good consumer knowledge of internal quality.

"Small House Preview," *Architectural Forum*, November, 1936, 406-20.

A survey of 11,207 families.

Smith, Elias, and Suchman, Edward A. "Do People Know Why They Buy?" *Journal of Applied Psychology*, XXIV (1940), 673-84. Reprinted in *The Language of Social Research*. Glencoe, Ill.: The Free Press, 1955.

Data produced to show that asking people whether something influenced them does produce useful information. Not convincing.

Smith, G. Horsley, and Vitriol, Herbert A. "Why We Use Group Exploration," *Printers' Ink*, (July 18, 1952), 46-48.

Describes the theory and practices involved in using small-group interviews at the Grey Advertising Agency, New York, to get the subtler aspects of consumer motivation.

Smith, Harold E. *Health Practices of Indiana Families*. West Lafayette, Ind., March, 1955. (Purdue University Agricultural Experiment Station, Station Bulletin 620.)

A study of the use of medical care by 603 rural families, and its relation to socioeconomic factors.

Smith, R. C. *Factors Affecting Consumer Purchases of Frying Chickens*. Newark, Del., 1953. (University of

Delaware Agricultural Experiment Station, Technical Bulletin 298.)

Snyder, Eleanor M. *Validity of Field Survey Data for Low Income Groups*. New York: National Bureau of Economic Research, 1956. (Processed.)

Paper given at Conference on Research in Income and Wealth. Contains some previously unpublished tabulations from a study sponsored by the Franklin D. Roosevelt Foundation.

The Social Attitude Survey. *Consumer Motivations in the Purchase and Use of Antifreeze*, January, 1956, no place or publisher.

A study for Dow Chemical, restricted.

Social Research, Inc. *Motivations Relating to Soaps and Chemical Detergents*. Chicago: Chicago Tribune, 1954.

See also *Chicago Tribune* and B. Gardner.

Soutar, M. S., Wilkins, E. H., and Sargent, F. P. *Nutrition and Size of Family*. London: Allen and Unwin, 1942.

Data from people on the King-standing Estate in Birmingham in 1939 on amount of housekeeping allowances, and a distinction between primary poverty and that arising because the husband does not turn over enough money to his wife.

Spicer, Edward H. (ed.). *Human Problems in Technological Change*. New York: Russell Sage Foundation, 1952.

An impressive group of studies of the disruptive effects on social and economic interrelations caused by the introduction of new methods, e.g. steel axe, wagon.

Spielman, Ralph. "A Study of Stratification in the United States." Ph.D. thesis. Ann Arbor, Mich.: University of Michigan, 1953.

A thesis in sociology using data

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from Surveys of Consumer Finances to examine the consistency of "status profiles" based on income, education and occupation, and the relation of status to various forms of economic behavior.

Spiller, Mortimer. "Snowfall Interview" (letter to the editor), *Printers' Ink*, (April 27, 1951), 22.

Raises critical questions about the lack of a correct sample and the biases introduced by a glib participant in group interviews.

Staab, Josephine. *The Effect of Classification on the Coefficient of Income Elasticity of Farm Family Expenditures*. Knoxville, Tenn., June, 1955. (The University of Tennessee Agricultural Experiment Station Bulletin 243.)

Bases of classification: disposable net cash income, gross cash income, and no monetary rating scale. (Condensation of University of Chicago dissertation.) Took sample of 331 and selected 108 "homogeneous" families under 55, less than 100 days off-farm work, positive net cash income, 50% of income or more from farming, no more than 6 year-equivalent persons, no relatives living with, and less than \$600 in medical expenses. All three correlated with expenditures about 0.75 but only used four groupings for each. With detail, status scale gave higher (better) expenditure elasticities.

Staab, Josephine. "Income-Expenditure Relations of Farm Families Using Three Bases of Classification." Ph.D. thesis, Chicago, Ill.: University of Chicago, 1953.

Stadelman, William J., and Jensen, Leo S. "Consumers Tell What Kind of Eggs They Want," *U.S. Egg and Poultry Magazine*, XVI (1950), 12-13.

Staehle, Hans. "Relative Prices and

Postwar Markets for Animal Food Products," *Quarterly Journal of Economics*, LIX (February, 1945), 237-279.

Combines cross-section and time-series data.

Star, Shirley A. "Obtaining Household Opinions from a Single Respondent," *Public Opinion Quarterly*, XVII (Fall, 1953), 386-91.

Had a sample with random selection within the household, so compared male with female answers. Also three types of questions, as to how thoroughly they were asked for family opinion. Men seriously underestimated wife's interest in visiting and being visited. But generally one respondent per household wasn't bad for the particular subject of recreation.

State of Connecticut. *Report of the Connecticut Commission on the Potentials of the Aging*. Hartford, Conn.: State of Connecticut, General Assembly, December, 1954.

Reports a survey done in Meriden interviewing men 55-64, men 65-74, employed women 55-64, and women 65-74 who had been employed when 55-64, about their employment history, health, retirement experience. Comparisons are made between retirement plans before retirement, and actual adjustments by the older groups. N's: 694, 396, 131, and 82. An "Area sample" stratified by Census enumeration district but not unbiased. Around $\frac{3}{4}$ of males 55-64 wanted to and expected to keep on working after 65. Less than half of those expecting to retire said it was because they preferred to. After 65 they worked for income or to keep busy, or didn't because of poor health or unemployment.

Stecker, Margaret L. "Why Do Beneficiaries Retire? Who Among them

Return to Work?" *Social Security Bulletin*, XVIII (May 1955), 3-12.

Report of a 1951 survey by the Bureau of Old Age and Survivors Insurance again showing that few retired because they wanted leisure. Stedman, G. H., "Determining Attitudes and Habits of Retail Shoppers," *Journal of Retailing*, XXVII (Fall, 1951), 133-42.

An "unrestricted sampling of consumer viewpoints," in 34 communities of New York State.

Steiner, Peter O., and Dorfman, Robert, *The Economic Status of the Aged*, Berkeley, Cal.: University of California Press for Institute of Industrial Relations, 1957.

Based partly on a survey of older people done by Census Bureau.

Stevens, Harold F. *A Survey of Poultry and Egg Marketing in Richland County*. Wooster, Ohio: Ohio Extension Service 1947.

Stevens, I. M., Sargent, F., Thiessen, E. J., Schudnover, C., and Payne, I., *Consumer Beef Use and Preference*, Fort Collins, Colorado: Colorado Agricultural Experimental Station Bulletin, 495-S, 1956.

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and secondary families, secondary meaning they got their magazine from somewhere without buying it. Very few differences according to magazine are significant.

Stigler, George, "The Early History of Empirical Studies of Consumer Behavior," *Journal of Political Economy*, LXII (April, 1954), 95-113.

A review article of economists' work before World War I in budget and demand studies.

Stone, Gregory. "City Shoppers and Urban Identification," *American Journal of Sociology*, LX (July, 1954), 36-45.

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Stone, Gregory P. "Sociological Aspects of Consumer Purchasing Behavior in a Northwest Chicago Community." Master's thesis. Chicago, Ill.: University of Chicago, 1952.

Stone, G. P., and Form, W. H. *Clothing Inventories and Preferences Among Rural and Urban Families*. East Lansing, Mich.: Michigan Agricultural Experiment Station, 1955. (Technical Bulletin 246.)

Stone, Gregory P., Form, William H., and Strahan, Hazel B. "The Social Climate of Opinion in Shopping for Clothes," *Journal of Home Economics*, XLVI (February, 1954), 86-88.

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- Stone, Richard. *The Demand for Food in the United Kingdom*. Cambridge, England: Cambridge University Press, 1950.
- Stone, Richard, and Rowe, D. A. "Some Studies of the Market Demand for Durable Goods," *Econometrica*, XXIV (July, 1956), 302-4.
- Abstract of a paper given at the Kiel meetings, with discussion.
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- Stone, Richard, assisted by Rowe, D. A. Corlett, W. J., Hurstfield, Rence, and Putter, Muriel, *The Measurement of Consumers' Expenditure and Behavior in the United Kingdom 1920-1938*, Vol. 1, Studies in the national income and expenditure of the United Kingdom, London: Cambridge University Press, 1954.
- Stone, Richard, and Rowe, D. A. *The Measurement of Consumers' Expenditure and Behavior in the United Kingdom, 1930-1936*, Vol. II, Studies in the national income and expenditure of the United Kingdom, London: Cambridge University Press, forthcoming.
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- A descriptive study of the distribution of net worth over component assets and liabilities and over subgroups of the population, with comparisons with US data from a similar national survey.
- Strodtbeck, Fred L. "The Family as a Three-Person Group," *American Sociological Review*, XIX (February, 1954), 23-29.
- The family doesn't split into two versus one the way unrelated three-person groups do.
- Strodtbeck, Fred L. "Husband-Wife Interaction over Revealed Differences," *American Sociological Review*, XVI (August, 1951), 468-73.
- Report on a study of discussions between husbands and wives, inferring influence process from frequency of types of communication.
- Strodtbeck, Fred L., and Mann, Richard D. "Sex Role Differentiation in Jury Deliberations," *Sociometry*, XIX (March, 1956), 3-11.
- People from jury lists, but laboratory controls. Uses Bales system; finds women initiate more positive reactions, and men more attempted answers and questions i.e., men pro-act and women react. Suggests this may be because women were less competent in the area of assessing damages, and that in general the less task-competent would concentrate on the social-emotional problems of the group.
- Strunk, Frederick R. (compiler). *An Inventory of Social and Economic Research in Health, 1955 Edition*. New York: Health Information Foundation, 1955.
- A report on current or recent research, listing publications if any.
- Stryker, Perrin. "Motivation Research," *Fortune* (June, 1956).
- A good run-down on the current operations and typical findings of motivation researchers, and the battle between quantitative and qualitative research. Little on actual techniques, however.
- Successful Farming. "What a Thousand Farm Families Are Going to Do About Building," Des Moines, Iowa:

Meredith Publishing Company, September, 1944.

A survey of 1000 farm families.

Suchman, Edward A., and Smith, Elias. "Do People Know Why They Buy?" *Journal of Applied Psychology*, XXIV (December, 1940), 673-84.

Suits, Daniel B. "An Econometric Model of the Watermelon Market," *Journal of Farm Economics*, XXXVII (May, 1955), 237-51.

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Survey of Consumer Finances. *Federal Reserve Bulletin*. Several articles each year since 1947.

Annual survey sponsored by the Federal Reserve Board and conducted in coöperation with Survey Research Center, University of Michigan. Some changes in emphasis, but long term trends as well as cross section data on many important financial facts and some attitudes.

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Survey Research Center. *Public Evaluation of Life Insurance, A Preliminary Report*. Ann Arbor, Mich.: University of Michigan Survey Research Center, Institute for Social Research, September, 1951 (processed, out of print).

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chases of life insurance, and attitudes toward companies and agents. A general sample was combined by weighting with a sample of Northwestern policyholders for more detailed tables.

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Szatrowski, Zenon. "Time Series Correlated With the Beef-Pork Consumption Ratio," *Econometrica*, XIII (January, 1945), 60-78.

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Interviews with 517 households in Flint metropolitan district, as to motivations for moving to the urban fringe. Characteristics of migrants are investigated.

Tax, Sol. *Penny Capitalism: A Guatemalan Indian Economy*. Washington, DC, 1953. (Smithsonian Institution, Institute of Social Anthropology, XVI, 315-20.

An anthropological study that concentrates on economic behavior.

Taylor, F. R., and Owens, A. L. *Consumer Preferences and Buying Habits*

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For Poultry Meat, Providence, Rhode Island. Kingston, R. I., February, 1955. (University of Rhode Island, Agricultural Experiment Station Bulletin 323.)

In October, 1951 there were 305 interviews, and 300 in May, 1952. Much detailed data about what they do, and some on preferences for frozen poultry.

Taylor, F. R., Owens, A. L., and Jasper, A. William. *Consumer Egg Buying, Consumption, and Preference Patterns*, Providence, Rhode Island, 1951-1952. Kingston, R. I., May, 1952. (University of Rhode Island Agricultural Experiment Station Bulletin 321.)

Buying habits, uses, preference for brown shells, yolks. Consumers could tell quality from pictures. There were 605 interviews in two waves—October, 1951 and May, 1952.

Thomsen, F. L., and Winton, Berley. *Consumer Preferences for Egg Yolk Color and Shell Color in New York City*. Columbia, Mo., 1933. (Missouri Agricultural Experiment Station Bulletin 329.)

Thorndike, Edward L. "Personal Expenditures and Changes in Them with Rising Prices," *American Journal of Psychology*, LXII (April, 1949), 266-71.

Asked 14 college graduates and one senior how they would reallocate expenditures if prices were 50%, 100%, or 300% higher.

Thorpe, A. C., and Gross, Irma H. *Family Use of Farm Homes . . . A Study of Activities Carried on by and Preferences of Family Members*. East Lansing, Mich., 1952. (Michigan State College Agricultural Experiment Station, Technical Bulletin 227.)

A study of 50 farm families in two counties.

Thorpe, Alice C., and Gross, Irma H. *How Homes are Used on Farms and In Small Cities. A Comparative Study of the Activities Carried On in the Homes*. East Lansing, Mich., December, 1955. (Michigan State University Agricultural Experiment Station Technical Bulletin 254.)

Fifty town families and 50 farm families in three counties in Michigan, restricted to families with husband, wife, and at least two children living at home, but no "in-laws" or roomers living in the home, in middle income group, the homemaker native born and the family having lived there at least a year. In addition to uses of home, data on desires, satisfaction with home, and rooms liked best and least, were collected.

Thurstone, L. L. "The Indifference Function," *Journal of Social Psychology*, (May, 1931), 139-67.

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A survey of 166 spending units on shopping habits and attitudes, with emphasis on whether purchases were made inside or outside Evanston. Probability sample but low response rate.

Tiebout, Charles M. *The Winnetka Economy, A Report Prepared for the Winnetka Chamber of Commerce*. Evanston, Ill.: Northwestern University Center for Metropolitan Studies, January, 1956.

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- were received and made inside or outside Winnetka. Also attitudes toward parking, additional sales tax, and shopping in Winnetka.
- Tingergen, Jan. "Does Consumption Lag Behind Incomes," *Review of Economics and Statistics*, XXIV (February, 1942), 1-8.
- Tintner, Gerhard. "Static Econometric Models and Their Empirical Verification, Illustrated by a Study of the American Meat Market," *Metroeconomica*, II (1950), 172-81.
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- Uses both cross-section and time-series data. Statistically complex and sophisticated.
- Tobin, James. "A Theoretical and Statistical Analysis of Consumer Saving." Ph.D. thesis. Cambridge, Mass.: Harvard University, 1947.
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- Tobin, James. "Relative Income, Absolute Income, and Saving," in *Money, Trade, and Economic Growth*. New York: The Macmillan Company, 1951.
- Tests Duesenberry's "relative income" hypothesis and finds it produces predictions not as accurate as those yielded by an "absolute income" hypothesis combined with a theory of the effects of asset holdings (i.e., ability to finance deficits) upon consumption.
- Tobin, James. "Consumer Debt and Spending: Some Evidence from Analysis of a Survey," *Consumer Installment Credit*, Part II, Vol. I, Washington, DC: US Government Printing Office, 1957.
- Tobin, James, "On the Predictive Value of Consumer Intentions and Attitudes," Cowles Foundation Discussion Paper No. 41, to be published in the *Review of Economics and Statistics*.
- Trotter, Virginia Y., and Liston, Margaret I. *Farm Family Housing Needs and Preferences in Nebraska*. Lincoln, Neb., June, 1954. (University of Nebraska College of Agriculture, Agricultural Experiment Station, Research Bulletin 175.)
- There were 558 interviews with a slightly biased sample, asking what they would like in a house and how they use rooms in their present homes.
- Tupper, G. E., and Harris, J. R. *Consumer Egg Buying Habits in Peoria, Illinois*. Peoria, Ill.: Bradley University Business Study 1, 1950.
- US Bureau of the Census and Agricultural Marketing Service, *Farmers' Expenditures for Farm Living and Production with Tables on Off-Farm Income 1955*, Census of Agriculture, Vol. III, Special Reports, Part II, Farmers Expenditures.
- US Congress, Joint Committee on the Economic Report. *Characteristics of the Low-Income Population and Related Federal Programs*. 84th Congress, 1st Session (Joint Committee Print). Washington, DC: US Government Printing Office, 1955.
- A collection of descriptive data on low income people and how they get along.
- US Congress Senate Committee on Banking and Currency. *Factors Affecting the Stock Market*. 84th Congress, 1st Session. Report to the Committee, April 30, 1955 (Committee Print). Washington, DC: US Government Printing Office, 1955.
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US Department of Agriculture.

See also the following authors: James A. Bayton, Hugh P. Bell, Robert E. Branson, Margaret L. Brew, Faith Clark, Philip B. Dwoskin, Ester S. Hochstim, Corinne Le Bovit, and Daniel B. Levine.

US Department of Agriculture. *Changes in Rural Family Income and Spending in Tennessee, 1943-1947*. Washington, DC: US Government Printing Office, 1949. (US Department of Agriculture, Miscellaneous Publication 666.)

US Department of Agriculture. 1948 *Food Consumption Survey*. Washington, DC: US Government Printing Office, 1956, 1957 and 1958.

This is a series of processed reports giving price-quantity-expenditure data in great detail by area and type of food. Based on a national probability sample of about 6000 households, by National Analysts.

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Comparisons of 1941 and 1944 data.

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laneous Publication 667.)

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US Department of Agriculture, Agricultural Marketing Service, Market Research Division. *Selected Highlights from a Study of Consumers' Use of and Opinions About Poultry*, Washington, DC: Department of Agriculture, January, 1957. (processed)

3,100 homemakers interviewed in June and July 1956, by Opinion Research Corp. of Princeton.

US Department of Agriculture, Agricultural Marketing Service. *Changing Patterns of Milk Consumption in Memphis, Tenn.* Washington, DC: US Government Printing Office, June, 1954. (Marketing Research Report 69.)

Market effects of a promotional campaign mixed with price declines. A survey showed that most consumers were not aware of the price declines, were aware of the promotion.

US Department of Agriculture, Agricultural Marketing Service. *Homemakers' Use of and Opinions About Fats and Oils Used in Cooking*. Washington, DC: US Government Printing Office, June, 1954. (US Department of Agriculture, Agricultural Market Service Research Report 67.)

A national sample of 2823 households, interviews with the person who bought and prepared the food. Data weighted for differential sampling fractions—92% response rate. Data on kind and number of fats used, how used, and the rea-

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sons for likes and dislikes in various uses. Data are broken down by region, rural-urban, age, income, education, etc. A supplement contains 208 additional tables.

US Department of Agriculture, Agricultural Marketing Service, Marketing Research Division. *Household Purchases of Butter, Cheese, Nonfat Dry Milk Solids, and Margarine, October, 1955*. Washington, DC: US Government Printing Office, December, 1955. (US Department of Agriculture, Agricultural Marketing Service, Marketing Research Division.)

Data from the Market Research Corporation's National Consumer Panel (5800 families) monthly from April, 1953 through October, 1955 on percentage of families buying, quantities purchased, and price. Published monthly.

US Department of Agriculture, Agricultural Marketing Service and Southern Coöperative Series Bulletin. *Prospective Demand for Meat and Live-stock in the South*. Washington, DC: US Government Printing Office, October, 1955. (US Department of Agriculture, Agricultural Marketing Service, Marketing Research Report 99—in coöperation with State Agricultural Experiment Stations in the Southern Region, Southern Coöperative Series Bulletin 43.)

US Department of Agriculture, Agricultural Marketing Service. *Purchases of Frozen and Canned Foods by Urban Families as Related to Home Refrigeration Facilities*. Washington, DC: US Government Printing Office, February, 1954. (Marketing Research Report 60.)

Data from 2040 urban families relating income level and ownership of home freezers to purchases of frozen versus canned foods.

US Department of Agriculture, Agricultural Marketing Service. *Women's*

Attitudes Toward Wool and Other Fibers, Washington, DC: US Government Printing Office, 1957. (Marketing Research Report No. 153, processed.)

Part I, on suits, shirts, and sweaters is based on a survey of 2,425 women conducted by Stewart Dougall and associates. Part II, on home sewing, knitting, and needlework is based on a survey of 1751 girls 14–17 years old conducted by Audits and Surveys, Inc.

US Department of Agriculture, Agricultural Marketing Service. *Supplement for 1954 to Consumption of Food in the United States, 1909–1952*. *Agriculture Handbook* 62. Washington, DC: US Government Printing Office, October, 1955. (US Department of Agriculture, Bureau of Agricultural Economics, *Agricultural Handbook* 62.)

Carries historical data through 1954. Supply and distribution data, no price data.

US Department of Agriculture, Agricultural Research Service, Office of Experiment Stations. *Bibliography of Research in Foods, Human Nutrition and Home Economics at Land Grant Colleges*. Washington, DC: US Department of Agriculture, various dates (processed).

Frequently contains reports of research on consumer behavior.

US Department of Agriculture, Bureau of Agricultural Economics. *Buyer Preference for Cranberry Packaging in Boston and Topeka*. Washington, DC: US Government Printing Office, May, 1953. (Bureau of Agricultural Economics, Marketing Research Report 34.)

Of 1758 customers who bought cranberries, 7/10 bought the bags rather than window boxes, and 3/10 bought on impulse. A study in six supermarkets during 16 days

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in two cities. Bags were preferred for better vision, boxes for better protection of the cranberries.

US Department of Agriculture, Bureau of Agricultural Economics. *Citrus Preferences Among Household Consumers in Louisville and in Nelson County, Kentucky*. Washington, DC: US Government Printing Office, January, 1950. (US Department of Agriculture, Bureau of Agricultural Economics Information Bulletin 2.)

A rural sample of 538 and an urban sample of 497, for a pilot study on use of citrus products and expressed reasons.

US Department of Agriculture, Bureau of Agricultural Economics. *Consumer Preferences Regarding Apples and Winter Pears*. Washington, DC: US Government Printing Office, October, 1950. (US Department of Agriculture, Bureau of Agricultural Economics, Information Bulletin 19.)

A national probability sample of 2573 households, weighted to adjust for varying sampling fractions. Interviews were taken with the person who bought the food in the household. Purchases of, and attitudes toward, apples and pears.

US Department of Agriculture, Bureau of Agricultural Economics. *Consumers' Use of and Opinions About Citrus Products*. Washington, DC: US Government Printing Office, October, 1951. (US Department of Agriculture, Bureau of Agricultural Economics, Information Bulletin 50.)

A national sample survey of some 3741 households on their use as related to income, age and education, preferences for various kinds and packaging methods, and brand loyalty. Stratified probability sample.

US Department of Agriculture, Bureau of Agricultural Economics. *Men's*

Preferences Among Selected Clothing Items. Washington, DC: US Government Printing Office, December, 1949. (US Department of Agriculture, Bureau of Agricultural Economics, Miscellaneous Publication 706.)

A representative cross section of men 16 years old or older living in private households. A probability sample of households and interviews with each man in those selected. There were 2508 interviews, weighted for different sampling fractions, Ownership, fiber preferences, and who did selection at time of purchase, for each of several clothing items: business shirts, sport shirts, wool shirts, extra trousers, summer suits, socks, underwear, pajamas, robes, and raincoats.

US Department of Agriculture, Bureau of Agricultural Economics. *Men's Preferences Among Wool Suits, Coats, and Jackets*. Washington, DC: US Government Printing Office, September, 1951. (US Department of Agriculture, Bureau of Agricultural Economics, Agricultural Information Bulletin 64.)

A national probability (area) sample of 2629 interviews, with more sophisticated questions and analysis than many similar studies. Content analysis of statements about recent purchases for references to values like comfort, pleasure, economy, social approval, recognition, and means like color, style, material, or fit. (Value and means in pairs.) Also used paired comparison technique for getting preferences between swatches of material. Also information on shopping and feminine influences.

US Department of Agriculture, Bureau of Agricultural Economics. *Mothers' Opinions of Fibers in Selected Items*

of *Children's Clothing*. Washington, DC: US Government Printing Office, October, 1951. (US Department of Agriculture, Bureau of Agricultural Economics, Agricultural Information Bulletin 65.)

A national sample survey of some 2266 mothers with children 12 years old or younger. An unbiased probability sample. Mothers' experience with and attitude towards various fibers in various items of children's clothing, and some expressed reasons, related to income, age, education, etc.

US Department of Agriculture, Bureau of Agricultural Economics. *Opinions of Homemakers Regarding Fibers in Selected Items of Household Furnishings*. Washington, DC: US Government Printing Office, November, 1952. (US Department of Agriculture, Bureau of Agricultural Economics, Marketing Research Report 26.)

A national probability sample of 2223 women homemakers (90% response rate). Experience with and preferences for fibers, by age, education, income, plus expressed reasons.

US Department of Agriculture, Bureau of Agricultural Economics. *Potato Preferences Among Household Consumers*. Washington, DC: US Government Printing Office, August, 1948. (US Department of Agriculture, Bureau of Agricultural Economics, Miscellaneous Publication 667.)

A national probability sample of private households in cities of 2500 or more, with varying sampling fractions but a total of 3306 interviews. Weighted data. People were not interviewed if they had paying boarders, or never used potatoes, or never prepared meals at home. Purchases, uses, and preferences for sizes.

US Department of Agriculture, Bureau

of Agricultural Economics. *Rice Preferences Among Household Consumers*. Washington, DC: US Government Printing Office, July, 1950. (US Department of Agriculture, Bureau of Agricultural Economics, Agricultural Information Bulletin 15.)

A national probability sample of some 2450 interviews, dealing with use of preferences, concerning and expressed reasons for preferences.

US Department of Agriculture, Bureau of Agricultural Economics, Division of Program Surveys. *Saving and Spending in Buffalo: Second Study*. Washington, DC: US Department of Agriculture, December 30, 1942 (processed).

Marked "Confidential," this is a report of an interview survey with 548 families in Buffalo, mostly on attitudes toward saving and spending, and plans for future use of US Savings Bonds.

US Department of Agriculture, Bureau of Agricultural Economics, Division of Program Surveys. *Wartime Saving in Louisville*. Washington, DC: US Department of Agriculture, June 21, 1944 (processed).

Marked "Restricted," a study by the US Department of Agriculture, Division of Program Surveys, of reasons for increased cash holdings of individuals, which tended to show a distrust of banks and concern with safety of funds, a residual of the depression experience.

US Department of Agriculture, Bureau of Human Nutrition and Home Economics in coöperation with experiment stations of Georgia, Alabama, Arkansas, Mississippi, South Carolina, Tennessee, and Virginia. *Farm Housing in the South*. Washington, DC: US Government Printing Office, no date. (Southern Coöperative Bulletin 14.)

Available from these experiment

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stations or the Housing and Household Equipment Division of Bureau of Human Nutrition and Home Economics, Beltsville, Md. (1,507 families).

US Department of Agriculture, Bureau of Human Nutrition and Home Economics in cooperation with State Agricultural Experiment Stations. *Housing Needs and Preferences of Farm Families . . . A Comparison of Data From Studies in Four Regions*. Washington, DC: US Government Printing Office, 1952. (US Department of Agriculture, Agriculture Information Bulletin 96.)

US Department of Agriculture, Bureau of Human Nutrition and Home Economics, *How Families Use Their Incomes*. Washington, DC: US Government Printing Office, 1948. (USDA Miscellaneous Publication 653.)

Data chiefly from 1941 and 1945 studies by BLS.

US Department of Agriculture Library. *Rural Health, Annotated List of Selected References*. Washington, DC: Bureau of Agricultural Economics and Public Health Service of Department of Health, Education and Welfare, June, 1953 (processed, Library List No. 60).

Contains reports on studies of consumer behavior in buying health services.

US Department of Commerce. Bureau of the Census. "Expenditures on Residential Owner-Occupied Properties, January to May, 1954," *Housing and Construction Reports: Alterations and Repairs*, Series H-101, No. 1. Washington, DC: Bureau of the Census, December 18, 1954.

Summary report from a national sample, as to expenditures on alterations and repairs. Much expenditures detail in study but little else.

US Department of Commerce, Bureau

of the Census. *Farms and Farm People, A Special Coöperative Report*. Washington, DC: US Government Printing Office, 1953.

A report from the 1950 census, in coöperation with Bureau of Agricultural Economics and Bureau of Human Nutrition and Home Economics, on the situation of farmers. Chapter 5 on housing shows that over half the farmers still had no inside running water, two-thirds had no inside toilet, and 70 percent had no hot water system.

US Department of Health, Education and Welfare, Public Health Service. *Sources of Morbidity Data*. Washington, DC: US Public Health Service. Annually since 1953, from the Clearinghouse on Current Morbidity Statistics Projects.

Some of these studies deal with consumer demand for medical services, though generally interwoven with incidence of illness.

US Department of the Interior, Fish and Wildlife Service. *National Survey of Fishing and Hunting*. A Report on the First Nationwide Economic Survey of Sport Fishing and Hunting in the United States During the Calendar Year 1955. Washington, DC: US Government Printing Office, 1956.

A survey done by Crossley, S-D Surveys using a probability sample of 20,000 homes to interview 6220 fishermen and 3108 hunters. Presents data on travel, expenditures, by age, sex, and place of residence.

US Department of Labor, Bureau of Labor Statistics. *Family Income, Expenditures and Savings in 1945, Birmingham, Alabama, Indianapolis, Indiana, and Portland, Oregon*. Washington, DC: US Government Printing Office, 1949. (Bureau of Labor Statistics 956.)

Samples of 197,596 and 191. Used split-schedule technique in Indian-

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apolis, and got unusually large "balancing differences" i.e., concentrating attention on some categories of expenditures secured overreporting of those expenditures.

US Department of Labor, Bureau of Labor Statistics. *Family Spending and Saving in Wartime*. Washington, DC: US Government Printing Office, 1945. (Bureau of Labor Statistics Bulletin 822.)

Contains, in addition to data, a clear explanation of methodology.

US Department of Labor, Bureau of Labor Statistics. *Family Income, Expenditures, and Savings in 10 Cities*. Washington, DC: US Government Printing Office, 1952. (Bureau of Labor Statistics Bulletin 1055.)

Expenditures by income level separately for each city.

US Department of Labor, Bureau of Labor Statistics. *Family Income, Expenditures and Savings, 1950*. Washington, DC: US Government Printing Office, June, 1953. (Bureau of Labor Statistics Bulletin 1097, revised.)

Survey for 1950 of 10,813 families of two or more persons in 91 cities. University of Pennsylvania is publishing comprehensive detailed tabulations plus monographs from this same survey.

US Department of Labor, Bureau of Labor Statistics. *New Housing in Metropolitan Areas, 1949-51*. Washington, DC: US Government Printing Office, 1952. (US Bureau of Labor Statistics, Bulletin 1115.)

US Federal Public Housing Authority. *The Livability Problems of 1000 Families*. Washington, DC: US Government Printing Office, October, 1945. (National Housing Agency Bulletin 28.)

An interview study of the reactions of people living in various federal housing projects.

US National Housing Agency. *Veterans' Housing Plans and Present Accommodations for Selected Areas*. Washington, DC: US Government Printing Office, March-May, 1946. (National Housing Agency, Bulletin 6.)

A survey in 19 cities in different parts of the United States.

US National Housing Agency. *Veterans' Housing Plans and Present Accommodations*. Washington, DC: US Government Printing Office, November, 1946.

A survey of 25,000 households in 42 states and the District of Columbia.

US News and World Report, and Benson and Benson, Inc. *The People Buying New Automobiles Today*. New York: United States News Publication Corporation, 1955.

A marketing report on 18 studies among the families who bought new 1954 models of each of the principal makes of automobiles. Mail questionnaires to Polk lists of purchasers of new cars in March 1954. They sent out about 1000 to purchasers of each of 18 makes, got about $\frac{1}{3}$ returned. A biased sample, but comparisons between makes may still be useful.

US Office of War Information, Bureau of Intelligence. *Income and Savings in Buffalo*. Preliminary Report. Washington, DC: Office of War Information, August 22, 1942 (processed).

Marked "Confidential," a report by the Division of Program Surveys on a small study (178 interviews) mostly on attitudes toward saving.

US Office of War Information, Bureau of Intelligence. *Public Response to Economic Controls*. Washington, DC: Office of War Information, September 8, 1942 (processed).

Marked "Confidential," this was a national sample survey by US

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Department of Agriculture, Division of Program Surveys with 1341 interviews on reactions to rationing, levels of information, and expectations of shortages.

US Public Health Service. *Tobacco Smoking Patterns in the United States*, Washington, DC: US Government Printing Office, December, 1956. (Public Health Monograph No. 45.)

Based on a nationwide survey on tobacco use. Analysis by age, sex, occupation, region, etc. Also a historical trend addendum 1880-1955.

US Public Roads Administration. *A Bibliography on Residential Mobility in Urban Areas*. Washington, DC: May, 1947.

Compiled in the Libraries of the Federal Works Agency, Public Roads Administration. A bibliography of 102 studies.

"The Urge to Own," *Architectural Forum* (November, 1937), 2-4.

1003 interviews in eight cities in varying regions. Survey measures chief objections to present housing.

Van Syckle, Calla. "A Note on Meat Buying in Everett, Washington," *Journal of Home Economics*, XLVII (October, 1955), 621-22.

Partial report on a study of 226 households in the fall of 1953. Of those with a preference, most prefer unpackaged to prepackaged meat.

Van Syckle, Calla. *Consumer Use and Purchase of Furniture in Flint, Michigan*, 1951. East Lansing, Mich., October, 1952. (Michigan State College Agricultural Experiment Station, Department of Home Management, Technical Bulletin 233.)

Interviews with a representative sample of 428 spending units, as to furniture inventories, recent purchases, and planning and shopping.

Found a short planning period.

Van Syckle, Calla. "Consumption of Fresh and Evaporated Milk and Dry Milk Solids," *Journal of the American Dietetic Association*, XXXI (December, 1955), 1228-31.

Partial report on a study of 226 households in Everett, Washington in the fall of 1953. Main factor: age.

Van Syckle, Calla. "Economic Expectations and Spending Plans of Consumers," *Review of Economics and Statistics*, XXXVI (November, 1954), 451-55.

Report of a small pilot study trying out a number of questions to get at consumer spending plans.

Van Syckle, Calla. "Food Management Practices in an Industrial City," *Journal of Home Economics*, XLVII (February, 1955), 119-20.

Some selected results from a food consumption survey in Everett, Washington in fall of 1953 ($n = 226$), on meal planning and use of a food budget. Forty-six percent tried to keep within a certain amount of expense for food supplies.

Van Syckle, Calla. *Practices Followed by Consumers in Buying "Large Expenditure" Items of Clothing, Furniture and Equipment*. East Lansing, Mich., 1951. (Michigan State University Agricultural Experiment Station, Technical Bulletin 224.)

Vicary, James M. "Free Association Tests Can Help Advertisers," *Printer's Ink*, (September 3, 1948), 44, 46, 48-50.

The author reviews the psychological and psychiatric uses of word association tests. He then illustrates the use of this method in connection with problems in advertising such as copy writing, product naming, slogans, and the like. Several case histories are given.

Vicary, James M. "How Psychiatric

Methods Can Be Applied to Market Research," *Printer's Ink*, (May 11, 1951), 39-40.

Word association, sentence completion, picture and visual methods, role-playing and situational methods, chain interviewing, and depth questioning are reviewed briefly.

Vicary, James M. "Seasonal Psychology," *Journal of Marketing*, XX (April, 1956), 394-97.

Reports the results of a 13 month continuing survey using word association tests with 5426 women. In response to the word "season," 66% mentioned a definite season, and a plotting by months reveals that mentions of spring start to dominate in January and February. In general responses anticipated seasons.

Vicary, James M. "Word Association and Opinion Research: 'Advertising'—an Illustrative Example," *Public Opinion Quarterly*, XII (Spring, 1948), 81-98.

New York City respondents give 1st four responses to 12 words—162 cases. He analyzes their responses to "advertising" showing that favorable and unfavorable associations can be isolated.

Vickrey, William. "Resource Distribution Patterns and Classification of Families," in *Studies in Income and Wealth*, X. New York: National Bureau of Economic Research, 1947.

Points out that distributions of income or assets depend on how one classifies people into families.

Vrooman, C. W. *Consumer Report on Pork Products*. Corvallis, Ore., August, 1952. (Oregon State College Agricultural Experiment Station, Station Bulletin 521.)

Sample of 227 mostly random but not unbiased. Data on purchasing habits, uses, preference for lean, medium or fat cuts. They preferred the leaner cuts.

Waite, Warren C., and Carroll, G. *Egg Buying by Consumers in Minneapolis*. Minneapolis, Minn.: University of Minnesota, 1948. (University of Minnesota Farm Business Notes 304.)

See also unpublished seminar report entitled "Consumer Egg Survey" by Gaynold Carroll on file in the Department of Agricultural Economics, University of Minnesota.

Wales, Hugh G., and Ferber, Robert. *A Basic Bibliography on Marketing Research*, Chicago: American Marketing Association, 1956. (AMA Bibliography Series No. 2.)

Few references on actual empirical research findings, mostly on methodology.

Wallis, W. Allen. "The Temporal Stability of Consumption Patterns," *Review of Economics and Statistics*, XXIV (November, 1942), 177-83.

An older study of shifts in income-expenditure relations for detailed food products over time, 1918-1935, and for Minnesota cities 1901-1935.

Watson, Elizabeth S. *Expenditures for Farm and Non-Farm Family Living*. Clemson, S.C., June, 1955. (Clemson Agricultural College, South Carolina Agricultural Experiment Station, Bulletin 427.)

A study in a county where industrialization has been important and was increasing. Comparisons between 125 farm families and 83 non-farm families. Very few differences appeared except in food and transportation expenditures.

Watts, Harold W. *Long-Run Income Expectations and Consumer Saving*, Cowles Foundation Discussion Paper No. 38, New Haven: Cowles Foundation, July 19, 1957. (processed)

Uses four Surveys of Consumer Finances, 187 sub-groups.

Waugh, Frederick V. *Readings on Agri-*

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cultural Marketing. Ames, Iowa: Iowa State College Press, 1954.

A book of abstracts of papers and research reports in this field, very few of which deal with consumer behavior.

Wayman, Leonard. "The Public Tenant Speaks," *Architectural Forum*, (April, 1942), 217-22.

This survey covered 30 families living in public-housing projects in eight northern cities.

Weeks, H. Ashley, Davis, Marjorie, and Freeman, Howard. *An Exploratory Study of Family Health Care and Spending Patterns*. New York: New York University Department of Sociology, Research Division, May, 1955 (processed).

A study of 61 Yonkers Protestants in complete families in lower middle and upper middle income groups. Much evidence of procrastination on medical and dental care, and use of druggist for advice. Hypotheses: If one person dominates family money, poorer health care. Social approval high for healthy children, but negative for adults admitting sickness and going to doctor.

Weeks, H. Ashley, Davis, Marjorie, and Freeman, Howard. *Apathy of Families Toward Medical Care (An Exploratory Study)*. New York: New York University, no date (processed).

Weiss, Edward H. "Why Do Consumers Really Buy Your Products?" *Advertising Age* (November 24, 1952), 48-49.

This is a review of some motivational findings and the way they were used by one agency.

Welton, David G. "Opinion Survey and Inventory of Medical Care, Personnel and Facilities in Mecklenburg County, North Carolina," *Journal of the American Medical Association*, CLII (July 18, 1953), 1145-49.

An interview study done by the

County Medical Society with some 500 households, on attitudes toward medical service.

Weschler, Irving R., and Bernberg, Raymond E. "Indirect Methods of Attitude Measurement," *International Journal of Opinion and Attitude Research*, IV (Summer, 1950), 209-28.

Discusses pictorial materials, play and dramatic materials, and verbal and written materials as indirect measuring devices. Various studies are summarized. Fifty-four references.

West, C. John. "Results of a Two Year Study of Impulse Buying," *Journal of Marketing*, XV (1951), 362.

A brief abstract of a study conducted among 5000 Canadian shoppers. Percentage of total purchases which had not been planned when the shopper entered the store: Drug Store 27%, Department Store 34%, Variety Store 42%, Grocery Store 43%.

West, Patricia Salter (with Ernest Haveman). *They Went to College*. New York: Harcourt, Brace and Company, 1952.

A mail questionnaire to college graduates draws conclusions about which ones do well on the basis of those who answered.

Wexler, Imanuel. "The Derivation of Preliminary Household Input Coefficients for Selected Industries, 1935-36," in *Report on Research for 1955*. Cambridge, Mass.: Harvard Economic Research Project, March, 1955 (processed).

Derives regression coefficients, in most cases separately for incomes above and below \$4,000.

What Happened to 386 Families Who Were Compelled to Vacate Their Slum Dwellings to Make Way for a Large Housing Project? 3d ed.; New York: Fred L. Lavanburg Foundation and Hamilton House, 1933.

Interviews with 386 families (mostly Italian), after they had moved, revealed higher rents, somewhat better housing, but 83% still in old-law tenements.

Wheeler, Bayard O., and Rainboth, Edith D. *Greater Seattle Housing Market Survey*. Seattle, Wash.: University of Washington Press, 1948.

Interviews with a probability sample of 4060 families in May, 1948 on plans to move and/or buy or build a house, plus preferences as to location and type of house.

White, G. M. "How Young America Lives: Broke But Happy on \$11,200 A Year," *Ladies' Home Journal*, LXXII (February 1955), 131-35.

A case study of a family that felt broke (out of cash) although economically speaking they were saving nearly a third of their income.

White, R. Clyde. "Social Class Differences in the Uses of Leisure," *American Journal of Sociology*, LXI (September, 1955), 145-50.

Based on 673 interviews in Cuyahoga County, omitting census tracts with median income over \$5000. A pattern existed, but not so clear for females, and much less regular for children.

White, Wylma B. "The Relation of the Family Income to the Family Size According to the Age Levels of the Wife for Florida Families in 1950." Master's thesis. Tallahassee, Fla.: Florida State University.

"Why People Buy the Houses They Do." *Housing Research*, IV (October, 1952), 1-7.

Some of the findings of a survey of home purchasers done by Survey Research Center. Comparison of what they wanted and what they got, satisfaction with purchase.

Whyte, William H., Jr. "Budgetism: Opiate of the Middle Class," *For-*

tune (May, 1956), 133-37, 164-72.

A descriptive literary explanation of the extensive use of expensive installment credit.

Whyte, William H., Jr. "The Consumer in the New Suburbia," in *Consumer Behavior*, Vol I: *The Dynamics of Consumer Reaction*, Lincoln Clark, ed. New York: New York University Press, 1954.

A "participant observer" study of Park Forest, Ill., a community with high mobility, much personal influence, "inconspicuous consumption." Similar material appears in several issues of *Fortune* during 1953.

Whyte, William H. Jr. "The Web of Word of Mouth," *Fortune*, (November, 1954); *Consumer Behavior*, Vol. II: *The Life Cycle and Consumer Behavior*, Lincoln Clark, ed. New York: New York University Press, 1955.

Consumers' influence on one another, with aerial photographs showing clusters of houses with air conditioning.

Wiegand, Elizabeth. *Selected Bibliography of Theses and Research in Family Economics, Home Management and Related Areas*. Washington, DC: American Home Economics Association, June, 1954 (processed).

There is also a 1955 *Supplement* to this Bibliography.

"Will Science Plan the Home of Tomorrow?" *Housing Research* (Spring, 1952), 39-45.

Mentions a project surveying research on occupants' use of and preference for various features of homes. Mentions an available correlation of findings, on loan, from the office of the administrator. Discusses University of Illinois space use laboratory where they change the arrangements, have people live in the house, count their trips

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through doorways, etc. For the last month occupants design their own arrangement.

Williams, Betty Helen. "Shopping Habits of Purchasers and Nonpurchasers of Small Electrical Appliances in Madison, Wisconsin," Master's thesis. Madison, Wisc.: University of Wisconsin, 1956.

Williams, Faith M., and Lockwood, Julia E. *An Economic Study of Food Consumed by Farm and Village Families in Central New York*. Ithaca, N.Y., April, 1930. (Cornell Agricultural Experiment Station Bulletin 502.)

Williams, S. W., and others. *Increasing Milk Consumption in Schools*. East Lansing, Mich.: Michigan Agricultural Experiment Station, 1955. (Special Bulletin 403, also North Central Regional Publication 60.)

Willoughby, G. "The Social and Economic Factors Influencing the Employment of Married Women," *Journal of the Royal Sanitary Institute*, (May 3, 1951), p. 240.

Wives seldom have a personal allotment from their husband's income, so they continue to work in part for the satisfaction of remaining independent.

Wilson, Allan R. "Qualitative Market Research," *Harvard Business Review*, XXX (January-February, 1952), 75-86.

The writer describes a method of getting information through open interviews with a small number of key people (buyers, media directors, engineers, etc.) which can aid management in making decisions about production and distribution.

Wilson, M., and Wells, L. *House Planning Ideas of Oregon Rural Women*. Corvallis, Ore., 1940. (Oregon Agriculture Experiment Station Bulletin 369.)

A survey of 450 Oregon home-

makers, of whom 60% lived on farms and the rest in villages and suburban areas.

Winnick, Louis. "Housing: Has There Been a Downward Shift in Consumers' Preferences?" *Quarterly Journal of Economics*, LXIX (February, 1955), 85-98.

Based on fragmentary data. See subsequent reply and rejoinder in the next issue of the *Journal*.

Winston, Clement, and Smith, Mabel A. "Income Sensitivity of Consumption Expenditures," *Survey of Current Business*, XXX (January, 1950), 17-20.

Groups aggregate expenditures into categories that did or did not vary much as aggregate income varied over time.

Winston, Samford. *Social Aspects of Public Housing*. Raleigh, N.C.: North Carolina State College, 1947.

A survey of public housing in six cities in North Carolina—194 white families and 112 Negro families.

Wold, Herman. "Eine Schwedische Untersuchung über die Elastizität der Nachfrage," *Metron*, XIV (1941), 263-85.

Wold, Herman, and Jureen, Lars. *Demand Analysis*. New York: John Wiley & Sons, 1953.

Extensive discussion of theory and statistical problems followed by computations of income and price elasticities of demand for various foods.

Wolff, Reinhold P. *Characteristics of Tourists, Dade County, Florida, 1954-55*. Coral Gables, Fla.: University of Miami, Bureau of Business and Economic Research, 1955 (processed).

Questionnaires handed to tourists at sightseeing places, in hotels and motels, mostly at Hialeah when there were no races going on.

35,000 questionnaires. Data on mode of travel, accommodations, length of stay, age, spending, number of visits.

Wolff, Reinhold P., and Voyles, Robert J. *Tourist Trends in the Caribbean, 1951 to 1955*. Coral Gables, Fla.: University of Miami, Bureau of Business and Economic Research, 1956 (processed).

Based on reports of tourist agencies.

Wood, Albert J. "Word Association Tests Help in Product and Copy Research," *Printer's Ink* (October 11, 1946), p. 48.

Feeling that the main stumbling block in product research is the limited vocabulary used by respondents (who can actually understand a much larger range of words), the author describes a "check list" technique he developed.

Wood, Elizabeth. *The Small Hard Core: The Housing of Problem Families Of New York, A Study and Recommendations*, New York: Citizens Housing and Planning Council of New York, Inc., 1957.

Studies the rejection of public housing by normal families.

Woolrich, A., Beveridge, E., and Wilson, M. *Housing Needs of Western Farm Families*. US Department of Agriculture, Bureau of Human Nutrition and Home Economics, in coöperation with Agricultural Experiment Stations of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Western Coöperative Series Research Report 1, 1952.

(902 households.)

Working, Elmer J. *Demand for Meat*. Chicago, Ill.: University of Chicago Press, 1954.

Devises a just-identified system of equations, and finds that a single-

equation model gives very similar answers.

Working, Holbrook. "Statistical Laws of Family Expenditure," *Journal of American Statistical Association*, XXXVIII (March, 1943), 43-56.

Old study using the 1935-1936 expenditure study, but perhaps the first to point out that total expenditure might be a better index of long-run economic status than income: "Curves expressing the relation of expenditures in particular categories to total expenditure per person, therefore, are probably more stable in periods of changing income than are curves expressing the relation of expenditures in particular categories to income per person."

Yamamura, Douglas S., and Zald, Mayer N. "A Note on the Usefulness and Validity of the Herbst Family Questionnaire," *Human Relations*, IX (1956), 217-21.

In Japan, questions about who made what decisions in the family and who did what, gave misleading results, perhaps because the decisions and actions selected were derived from a study made in a different culture.

Yates, Beatrice Dodson. "A Study of the Relationship of Selected Factors to the Number and Type of Mechanical Appliances Owned by 60 Families in Maryville, Tennessee." Master's thesis. Knoxville, Tenn.: University of Tennessee, 1950.

Yoell, William A. "A Technique of Depth Interviewing," *Printer's Ink* (January 31, 1947), 33-35.

Describes the camera-action technique, based on discovering behavior processes of consumers, which is used in developing basic copy, merchandising and product ideas.

Yoell, William A. "How the Depth In-

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terview Reveals Attitudes Toward New Products," *Printers' Ink*, (February 7, 1947), 50-52.

A study of folding screens is outlined in order to illustrate the use and value of the camera-action interview.

Young, Michael. "Distribution of Income Within the Family," *British Journal of Sociology*, III (December, 1952), 305-21.

Cites a number of British studies to the effect that in poorer families the wife often doesn't get enough of the family income so that too much is spent on the husband's drink and tobacco. Some data are given from other studies, but the data are inconclusive.

Young, Paul Thomas. "The Role of Hedonic Processes in Motivation," in *Nebraska Symposium on Motivation*.

Lincoln, Neb.: University of Nebraska Press, 1955.

Experiments with rats show something clearly like diminishing utility, but raise the problem how to handle the time dimension, and habit formation.

Zimmerman, Carle C. *Consumption and Standards of Living*. New York: D. van Nostrand Company, 1936.

The author is concerned with the role of consumption in human life and the studies of consumption which have been conducted all over the world. Included are summaries of the contributions of various sociological schools.

Zwick, Charles. "A Quantitative Study of the Demand for Meat," *Econometrica*, XXIII (July, 1955), 327-28.
A brief summary report.

PART TWO

The papers and comments that follow were presented at a Conference on Consumption and Economic Development sponsored by the Universities-National Bureau Committee for Economic Research, at Princeton in October, 1955.

13

INTRODUCTION

Ruth Mack

The Conference was organized by Dorothy Brady, James Tobin, Karl Fox, Margaret Reid, Reavis Cox, Arthur Smithies, and Ruth Mack (chairman). The intention of the committee was to contribute to an understanding of trends in consumption and saving, primarily in Western economies. But if I interpret their ideas correctly, two fundamental notions guided the construction of the program: (1) An analysis of conditions and experiences in unindustrialized countries may, in addition to its direct area of applicability, serve to render visible some of those forces that account for trends in the buying and saving in Western economies but that tend to be invisible when the culture is close to home. (2) Since the saved dollar in part provides a service—security—an explanation of saving must be consistent with explanations of the acquisition of other utilities; in consequence trends in saving and in the components of consumption are usefully viewed together.

Committed to so broad an area, each paper could do no more than sample one type of problem. Sol Tax's piece on

the symbiotic Indian and Ladino cultures of Guatemala shows that the path of change itself is sometimes chosen by a people, and sometimes rejected; he outlines some of the elements that cause a people to feel presented with an "alternative" way worthy of consideration. Simon Rottenberg, by analyzing the swift-moving economy of Puerto Rico of recent years, reveals the web of interrelation between change in spending or the proportion of income saved and other aspects of an economy: migrations of people associated with changing industrial structure, population growth, unleashing of women, consumption decisions made by government, chinks in the wall of caste and class. The increase in income experienced in Puerto Rico seemed not only to influence buying, but there were signs that causality moved in the opposite direction too—heightened interest in consumption influenced earnings. Comments by Cora DuBois and Elizabeth Hoyt bring out several double lessons taught by these and other investigations concerning trends in consumption in relatively industrialized

countries and how these experiences need to be interpreted and applied in order to be helpful in furthering the welfare of the less industrialized countries.

The next three papers undertake a quantitative analysis of the international and intertemporal composition of consumption. Faith Williams makes a plea for more information. She points out the value and the need for comparability among budget studies and presents an annotated bibliography of 175 studies of family spending made in all parts of the world since World War II. Irving Kravis exploits the yield of time series for fifteen different countries. He produces highly valuable estimates of real per capita consumer expenditure for sample years over as long a period of time as possible (ninety-two years in the case of Sweden). His summary tables give six "functional" divisions of consumption—food, housing, clothing, and the like—though appendix tables give finer breakdowns. The percent of consumption devoted to each category is subject to wide variation, only a portion of which falls into identifiable patterns. Compared over time or from country to country, the percent of total consumption taking the form of food behaves in the expected fashion and declines as the level of real consumption rises. Expenditure on domestic service, presumably because of structural changes, falls as real income rises. Expenditure on transportation as a whole rises with higher levels of living because of expenditure on the private automobile. For other functional subdivisions, the picture is confused. Clearly, the orderly conceptions called "Engel's Laws" are honored more by violation than by conformity in these com-

parisons; and considering the number of factors other than real income that must differ among the countries and times, it is little wonder. The factors briefly touched on include climate, technology, the distribution of income (a point emphasized by Loftus), and the number, talents, and values of the people as reflected in the labor market and in the character of goods demanded and their relative prices. Some parts of the apparent eccentricities of the data also seem to reflect, Kravis finds, reasonable reactions to differences in price and a tendency for people to choose among commodities (they are studied for sixteen to fifty nonfoods) so as to make the best use of the purchasing power of their money. Kravis' ingenious calculations suggest also that geographic propinquity, with all that this implies about similarity in tastes and technologies, may play some part.

The association between change in price and in consumption is scored again by Eleanor Snyder in comparisons of budget studies in the United States between 1889 and 1950. She finds that a material portion of the difference in consumption of food and housing at various average incomes in current dollars is explained by the two variables, the level of income and the price index of the commodity group. But much unexplained difference remains. Richard Foote in a paper available at the Department of Agriculture giving the results of about 200 analyses of price elasticity of demand, spells out a story for agricultural commodities that seems consistent with theoretical expectation.

The next set of papers tackled a particular sphere of expenditure and attempted to learn what influenced its growth; Ferber explored the service

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group, Oxenfeldt a new durable commodity, television. Their painstaking attempt to analyze the factors accounting for changes in consumption, and the uneasiness that both authors express concerning their results, illustrate how hard it is to explain in quantitative terms why consumers do what they do. Thus, analyzing the course of many categories of services, 1935 to 1953, Ferber finds the measured impact of income quite different depending on what other variables are included. This is certainly a common characteristic of regression analyses of consumption, though most investigators are less willing to exhibit it. Another source of ambiguity was demonstrated by Irving Schweiger. The distribution of saving among the several income groups differed sharply depending on how saving was defined. The distribution broadened very substantially as net purchases of, first, autos, and then, other durable goods, are included in the definition of saving. Since the relative importance of these several forms of saving differs markedly from place to place and from time to time, so must the subjective meaning of saving, and consequently its extent. An analogous change in subjective meaning must be proceeding apace as public insurance against risks of any sort replaces or supplements many of the functions of private saving.

All these papers and discussions, then, so different in the materials examined and the methods followed, find reflected in the figures, thereby making them difficult to explain, a wide variety of variables—some lying at the roots of a culture or in the psychology of a people, some economic in origin, all working on the physical content of living, some, in turn worked upon by it.

One way around all this complexity, ambiguity, and confusion is to seek some transcending generality. This is the course that Milton Friedman followed. By making a conceptual separation between the portion of income and consumption associated with a lifetime (or some shorter but still substantial) planning horizon, Friedman sought to explain the whimsies of observed saving and consumption. The permanent sectors bear, Friedman claims, a stable relation to one another at a level that is independent of the level of real income, though dependent on such factors as the rate of interest, human wealth of the community, uncertainty, family constitution, etc. Temporary income has no influence on spending. Whether either common sense or empirical evidence does in fact support or rather, fail to contradict, the hypotheses, is brilliantly debated by James Tobin, Guy Orcott, Irwin Friend, and, in rebuttal, Milton Friedman; each reader will be his own judge of to whom the prize.

My own conclusion is that the negative findings and implications in the Conference papers are sound and must be faced. Long-term trends in consumption or differences among peoples in consumption patterns are not now understood with the degree of accuracy necessary to illuminate future trend differences in consumer behavior among Western countries; they are not understood sufficiently to provide more than vague common-sense knowledge of the Western economies as a guide in assisting unindustrialized countries.

Problems at three levels were brought out during the Conference: First, it is necessary to learn to name the important influences on trends in the

structure of consumption and saving (including the influence of standards on income and therefore on aggregate consumption). Much of the matter to which I refer has been virtually excluded from study by the convention of *ceteris paribus*. But these exclusions are the central substance in the study of trends and broad differences among Western economies. They are central to the application of this knowledge to the problems of underdeveloped areas, a problem now entering a phase of accelerated study. Oddly enough, I think it likely that this study will have profound effects on the science of economics as a whole. For it should batter down the door that has kindly sealed from view our disordered attic of *ceteris paribus*, force us to sort over its contents and bring much of it down to our living rooms. How to do this without creating disorder there is the challenge that we face.

The second level of problem involves the choice of meaningful categories. Kravis found himself stopped in his efforts to measure changes in the structure of consumption by a functional classification that did not seem to reveal the vast changes in the content of living that are known to have occurred, and Kravis was not alone in this. When elaborate efforts at measurement are found to conceal the dictates of common sense rather than to make them vivid and precise, something is seriously

wrong with the underlying concepts.

The third level of the problem involves the techniques of measurement. Much hard work in this field yields nebulous answers that often cannot even be confidently hitched to the particular question asked, because the correlation techniques utilized do not actually isolate the influence of variables that are subject to two-way causality and are not strongly unique and distinctive in their behavior. Thus empirical study does not afford a basis for selecting the better of competing hypotheses. The data simply are not good enough. The variables that bear on the economics of development are too numerous and too intertwined. But fortunately there is technological progress in the study of consumption as well as in consumption itself. The papers and discussions at several points hint or assert how betterment may be achieved by a combination of particularized experiment design and questions phrased for their susceptibility to selective test.

But, in the end, much of what influences consumers must remain inaccessible to quantitative appraisal except perhaps vaguely and in retrospect. The papers, by roughing in some of the boundaries of the map of consumer behavior, show where these white spots are and thus provide perspective and orientation for the pursuit and utilization of knowledge concerning the more accessible areas.

CHANGING CONSUMPTION IN INDIAN GUATEMALA¹

Sol Tax

1. THE PROBLEM

The Indians of Guatemala are among the economically underdeveloped peoples, popularly called "backward" and "unprogressive" and by implication static or at least slow to change. Whatever justification may lie in such appellations, as regards the total resulting society, it should not be inferred that individual Indians are less prone to change than individuals in faster-changing societies.

Change in an individual is a function of alternatives presented to him; and when given realistic choices, nothing in my experience with Indians indicates that they are slower than we are to accept the changes that seem to them to be in their interest. The difference is of course in the alternatives presented; and if in contrast to us Indians change little from one generation to the next, a sufficient reason is that (in the same contrast) few novelties are presented. The moral of this observation is that

one should not speak of people as conservative, or use the term "progressive" as a personal characteristic, until it can be demonstrated that they are averse to accepting alternatives that are clearly, and by their own definition, advantageous. I have never seen this demonstrated and must assume that Indians in Guatemala are in this respect no different from people in New York, and that to alter consumption patterns one need only make available new alternatives that from their point of view are worth the cost.

It is the purpose of this paper to show that consumption patterns of the Indians of Guatemala do change in ways that may be expected, provided one's expectations do not violate this rule, and to show why they do not change more.

2. LADINO SOCIETY AND INDIAN COMMUNITIES

When the Spaniards conquered Guatemala in 1524 they found a popu-

¹ Abbreviated from the original paper; a less abbreviated version is published in *Economic Development and Cultural Change* (Chicago: University of Chicago Research Center), October, 1956.

lation of perhaps a half million Indians, divided into principalities cross-cut by a division into classes of rulers and priests on the one hand and peasants, laborers, artisans, and burden carriers on the other. The conquerors destroyed the native rulers and substituted themselves for the aboriginal priestly and ruling classes; the Indian masses retained their position under new masters, and their population has about quadrupled.

Geographic heterogeneity has always required or encouraged a regional division of labor. Exchange aspects of the pre-Columbian economy (trade, markets, and some money) were intensified with the introduction of new crops and industries. Nineteenth-century introduction of coffee and twentieth-century contacts with an industrializing world have in the past eighty-five years brought about some new changes and some acceleration of old trends. But there remain two groups in Guatemala: (1) the Indians living in self-consciously distinct small endogamous communities with broadly similar cultures, and (2) so-called Ladinos—cultural descendants of the Conquistadors and European colonists—a class-divided population of “Guatemalans,” to and through whom elements of world culture are transmitted. Although the upper class of Ladinos has always recruited new members from abroad, the Ladino group historically has been recruited from Indians who leave their Indian societies and take on Ladino language, culture, and social identification. Individuals and sometimes whole communities cease being “Indian” and become “Ladino.” “Racial” barriers are of little or no importance.

It needs to be emphasized that genu-

ine cultural differences are recognized by Ladinos and Indians alike. Ladinos think of Indians as backward but also as mysteriously different, living in a different world; Indians see the Ladinos as different rather than superior, and generally have no thought or desire to change their own ways to those of Ladinos. Indeed, each local Indian com-



munity is conscious of its own uniqueness, and sees neighboring Indian communities as having not only different customs and ways—which they have in very minor degree compared to the difference between Ladinos and Indians—but even different biologies. It should be clear that the differences between Indian and Ladino are not only great, but by Indians are exaggerated. One need not expect easy or automatic emulation of Ladinos by Indians, except in the cases of individuals who have changed their allegiance and perspective.

3. LADINO VS. INDIAN PATTERNS OF CONSUMPTION

Ladinos have higher incomes than Indians and in all respects have a higher level of living. They presumably have a higher rate of saving, invested in both large landholdings and larger businesses; the Indians do not use banks, but all except the poorest save up enough money through the months to buy clothing in season, to take care of small emergencies, and to take occasional opportunities to add to their land. I have no direct data comparing family sav-

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ings, however, and must leave them out of account. The following is a rough summary comparison of Indian and Ladino consumption of food, clothing, and housing.

FOOD

Indians maintain their pre-Columbian dependence upon corn (maize), fresh and dry, the latter generally softened by boiling with lime, ground and made into a variety of gruels, tamales, tortillas, etc. Corn is the staff of life, eaten at all meals. Yellow corn is the most popular. Dry (especially black) beans are second in importance, and are in general simply boiled. Sweet cassava, and chile, salt, and a number of native herbs and greens are used. Squash is important, generally sweetened for a dessert. When meat is eaten it is generally beef (original European). Chickens (European) and turkeys (native American) are feast and special foods; chicken eggs are fairly commonly eaten. Seafoods, white bread (European), and honey are eaten in Holy Week. Coffee and low-refined sugar (both European) are part of the daily diet. Hot chocolate (native American) and white sugar are mainly ceremonial foods. Distilled liquor (grain and sugar cane) has replaced the native fermented corn and fruit beverages; it is not part of the household economy. Men and women alike smoke cheap bought cigarettes in small quantity, usually only on occasions.

Ladinos eat the corn foods of the Indian diet, prepared in the same ways, but add wheat bread and rice to their everyday diet. They too eat beans and chile, and a larger variety of spices and vegetables. They eat beef, pork, mut-

ton, chicken, turkey, and eggs, and add dairy products—milk, cheese, and butter. They use lard and flour in cooking; they fry, roast, and oven-bake foods, with complex recipes. Ladinos use coffee, but also tea and chocolate commonly. They use brown but also white sugar, and cakes and candies, fairly commonly. They drink the same hard liquor as Indians, add beer and wine, and smoke more cigarettes and occasional cigars.²

CLOTHING

Ladinos in cities and towns wear the changing fashions of European clothes. In the country shoes and neckties are neither always common or ever extraordinary, but clothing of men, women, and children is of the generic European type. Rural men often wear white cotton drawers (*calzones*), sometimes with sashes. Women generally wear one-piece dresses. Men always wear hats—"Stetson" felts to local straws. There are class differences in clothing, but these are not regional or local.

Every Indian community is distinguished by the costume of its people, always also distinguishable from those of Ladinos. Among Indians, a costume belongs to a town, and each town has its more or less strikingly distinctive male and female costumes, most parts of which are homewoven or at least locally tailored. The children wear replicas of adult costumes. Even in areas where the differences are minor, the unique elements are symbolically important. One cannot speak of "Indian clothing" when the garments, the ma-

² Table 1 summarizes these differences in diet between Indians and Ladinos in terms of per capita weekly food consumption.

terials, the forms, and the designs (and also the costs) vary from community to community. Yet some generalizations are possible: Indians do not wear shoes; they wear sandals or go barefoot. Indian men do not wear neckties even where they use shirts and jackets; men always wear sashes, even where they also wear belts. Women always wear skirts (generally wrap-around), untailored blouses (*huipiles*), and woven sashes, never dresses. Men generally wear woven headpieces, and if they wear straw hats they use both. Neither men nor women wear European-style underwear, hose, or nightclothes. An Indian and a Ladino farmer both wearing *calzones* (which a few Indian towns permit) may look alike at work; but their Sunday bests will differ, and the clothing of their women always will.

HOUSES

The house of a Ladino characteristically has several rooms surrounding a patio. It has walls of adobe (sun-dried) bricks plastered inside and out, and roof of baked clay tiles (or corrugated metal) or, among poorer rural people, grass thatch. There are wooden doors, and windows of glass, with shutters. The floor is of clay tiles or wood. In the house are tables and chairs, bedsteads, raised fireplaces, or iron stoves with chimneys. Kitchen utensils are generally enamelware, and there are also china dishes and some table cutlery. Where available, Ladino homes generally have electricity; otherwise, kerosene or gasoline pressure lamps. City and town houses, depending on wealth, are fine and well furnished according to the fashion, with lighting fixtures, appliances linens, and the like.

Indian house types vary with communities, though there is considerable overlap. In some Indian communities the houses are like those of Ladinos except that they are not plastered and do not have windows or floors. In others the house is made of mass-adobe (mud-filled canes) or simply cane, with thatched roofs. Poor rural Ladinos may live in the type of house used by the Indians of the region where they live, but even so they would tend to add windows (even if without glass). Indian houses rarely have electricity, and are lighted only by tin lamps, pitch torches, or the fire. Indian houses often have bedstands, with boards for the bed (rarely if ever springs and mattresses); whether on the dirt floor or a platform, Indians usually sleep on mats, with blankets. Pillows, sheets, and the like are not used. The Indian uses mainly pottery vessels for cooking and serving, though there is some enamelware. Table settings are rare; indeed, eating is rarely done at a table.

However much or little overlap there may be with respect to some items, Ladinos and Indians have different ways of life, including different characteristic patterns of food consumption, costume, houses, and furnishings. From 430 years of experience it becomes evident that contact with Ladinos (or European patterns) does not cause Indians to lose their ways, including their tendency to maintain local distinctions; though Indians and Ladinos have adopted important elements each from the other, two distinct patterns continue to exist.

The lessons to be learned from this history are therefore (1) that Indians have indeed changed their consumption patterns and have incorporated many novelties, and (2) that they have never-

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theless maintained a total pattern distinctively their own.³ The evidence appears to be that the major changes occurred in the first generation after the sixteenth-century conquest, and that the new pattern crystallized early and has maintained itself since with relatively minor changes. It seems easiest to explain this history on the hypothesis that alternatives were presented in large numbers when the Spaniards first came, that the Indians adopted many, and that in the ensuing hundreds of years few new alternatives appeared. Colonial Guatemala settled down to a fairly stable set of Indian cultures coexisting with an equally stable Ladino culture.

4. RESISTANCES TO DIFFUSION

With the general improvement in communications of the past fifty or seventy-five years, in which Guatemala has in some degree shared, there appear to be increasing numbers of alternatives available to Indians, it is easy to imagine, therefore, that Indian patterns will be destroyed. One tends to forget in such short perspective that the Indians were highly selective in their original adoption of Spanish items, and reinterpreted and fitted them into a distinctive Indian pattern. Remembering this, one should guess that the same process will continue. But because Ladino culture seems to be part of the mainstream of the world culture to which we belong, and because Ladinos are politically dominant, many of us

assume that there is an inevitable shift from Indian to Ladino ways. The fact is simply that although Indians all continue to adopt some elements of the outside culture, and many Indians have changed their ways completely (and their identification) an essentially Indian culture still commands in Guatemala more adherents than did the Indian culture of 1520. The Indians of Guatemala are not to be thought of as a disappearing remnant, but two million people living in Indian communities with stable cultures different from neighboring Ladinos. Although individual Indians do become Ladinoized, it should nevertheless not be assumed that Indians who are exposed to and who can afford them will adopt Ladino consumption patterns.

Items of consumption are often less important as useful objects than as symbols. American costume, for example, is most important as conventional identification with a status in society. In Guatemala, where there are several societies, a change in consumption pattern that is interpreted as signaling a change in group identification can and will be made only when the major shift of identification is already accomplished. Houses and clothing are particularly visible, and have become important symbols. If an Indian becomes financially able to wear shoes he will not do so; if he can afford a Ladino style house he will not build one if for no other reason than it is Ladino style. I shall not belabor the point that, generally speaking, a change of identification is required before such changes in consumption occur. But in a deeply cross-cultural situation a change in social identification means crossing a chasm that is deep and wide; the Indian who

³ In *Penny Capitalism* (especially pp. 19-27) there is a fairly detailed discussion of the limits of the inroads of European technology and material culture on the Indians of the region.

SOL TAX

TABLE 1. Per Capita Weekly Consumption (Grams) in Rural Guatemala*

Item ^b	Poorer		Richer	
	Indian	Ladino	Indian	Ladino
Milk	26	231	37	637
Cheese	22	70	63	148
Cream and butter	—	1	—	19
Beef	114	143	182	264
Pork	50	145	62	129
Fowl	9	6	57	94
Deer, goat, rabbit, etc.	—	—	—	17
Fish	10	64	16	6
Crabs, shrimp, fator, etc.	5	—	10	—
Eggs	21	41	41	129
Lard	7	32	11	78
Beans	345	301	395	390
Misc. leguminous, oleagenous seeds	9	8	12	11
Chile	60	35	63	64
Tomatoes	78	135	93	163
Squash	123	53	237	21
Vegetable pear	88	196	114	210
Onions and garlic	50	77	58	71
Vegetables and herbs	207	150	234	190
Citrus fruit	22	140	135	78
Bananas and plantains	128	403	62	175
Avocados	13	17	27	60
Peaches, plums, etc.	28	70	33	114
Potatoes	35	75	48	161
Sweet potatoes and <i>ichintal</i>	6	11	11	—
Maize	3301	2598	3931	2937
Wheat bread and flour	17	77	64	206
Rice	22	69	21	105
Oats, rye, etc.	—	1	3	4
Low-refined sugar	193	233	233	204
White sugar	17	64	22	134
Molasses, honey	—	—	—	2

* These data are the results of a 1943-1944 survey of food consumed in eight representative Indian and four Ladino communities in rural Guatemala. The survey was planned and directed by the writer for the Carnegie Institution of Washington. Field personnel included Antonio Goubad Carrera, who later became director of the National Indianist Institute of Guatemala, and Juan de Dios Rosales, the present director. The results are in process of tabulation by Dr. Emma Reh of FAO and the Instituto de Nutrición de Centroamérica y Panamá. The data given here are preliminary.

^b Some economically important items such as coffee were not tabulated because not important from the point of view of nutrition.

has become a Ladino is transformed into a different person, in way of thought as well as way of life. This generally comes about only when accidents of circumstance bring the Indian into a Ladino environment in early childhood. The Indian becomes Ladinoized first, and by circumstances not related to will or to ability to pay. Then he (and more so his children) having

already changed their identities (so to speak) can and will adopt the accompanying symbols. It is only then that financial ability to support the symbols becomes relevant. But then we are no longer talking about Indians, but about economic differences among Ladinos.

Even when a difference is not a symbol of social identification, there are resistances related to the cultural differ-

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ence. There are innumerable important differences of taste. For example, Indians are not fond of milk; or although they like white bread, they look upon it as we do cake, and far prefer their corn foods as a steady diet. Indeed, of all the wonders told about the United States, the one that seemed most unbelievable to my Indian friends was that we do not eat tortillas. They think it not possible to fill up on bread. Or to take the example of windows, which we say are good to look out of and to let light in, the Indians argue that windows are bad because they let passers-by look into the house. Indeed passers-by do look into Ladino houses; and a party inside finds all the uninvited at the windows. It is surely unnecessary to argue that people will not use added income to change from things they like to things they do not like.

I have been talking about changing consumption patterns in the sense of adding new items of consumption. It is easy enough to show (e.g., for food; see Table 1) that Indians do not add new items, or change from what they have to something that Ladinos have, simply because they have been exposed to the novelties and can afford them.⁴ Absurd as the contrary seems, it is an assumption that appears to govern much of the behavior of well-meaning outsiders, who wish to bring knowledge and opportunity to Indians and become discouraged and angry because Indians won't do what is—in the view of the outsiders—obviously good for the Indians.

⁴ Of course some items in the Ladino pattern are cheaper than equivalent Indian items. This is often true with costume, for example.

5. CHANGES WITHIN INDIAN PATTERNS

But because Indians for understandable reasons do not readily give up what suits them for what does not suit them, it is frequently concluded that they are slow to change. Of course this does not follow logically; indeed it comes mainly from the conceit of the fool who imagines that only a fool would not wish to be like himself, but is willing to concede that the other person may only be a bit slow. This is a fairly general European fallacy and not a universal characteristic of people. In fact these very Indians of Guatemala take for granted that people and cultures are and can remain legitimately different. Probably this is one reason why they are able to maintain their local differences. The fact is that Indians are not at all slow to change. But to see this one must first accept their own pattern of needs and tastes, and then examine minor changes within that pattern, or changes in the proportions of various items. Several facts emerge:

First, it appears that as Indians become richer they tend to use more of everything—not only more of the more expensive goods, but more of everything—more corn as well as more meat (Table 1) and larger houses (Table 2). It is as though the extra income is needed to bring the family to a point where changes are possible. But the facts also suggest that the Indians like what they have and simply want more of it. This is clear with the goods that are also symbols, but it is also evident in the case of foods that are all within the traditional Indian diet. The proportion of expensive protein food increases; but since the amount of corn does also,

SOL TAX

TABLE 2. Living Space of Ten Panajachel Households^a

Family Order No.	Number of "Adults"	Number of Rooms	Total	Square Feet of Space			Square Feet Room Space per "Adult"
				Yard	Porches	Rooms	
3	4.5	5	2,035	1,000	153	882	196
5	7	3	2,610	1,350	120	1,140	163
15	6 ^b	4	1,913	900	104	909	151 ^b
19	4	2	2,583	1,620	120	843	210
28	2.5	4	1,227	432	30	765	306
37	2.5	3	986	324	133	529	212
94	4	1	798	576	—	222	55
95	8	1	1,182	900	—	282 ^c	35 ^c
108	2.5	1	230	90	24	116	46
109	6.5	1	263	—	—	263 ^d	40 ^d

^a From Sol Tax, *Penny Capitalism: A Guatemalan Indian Economy*, (Washington, D.C.: Smithsonian Institution, No. 16, 1953), Table 82, p. 200. The ten families are a sample of 133, from rich (No. 3) to poor (No. 109).

^b Servant not counted.

^c Projected house not included.

^d House under construction included.

it is evident that Indians like more meat but they like it with even more corn.

This tendency to magnify the quantities, while remaining within the culture, is also seen in the case of an industrialized Indian community. Information recently collected in Cantel, an Indian community in Western Guatemala which has for eighty years been the site of the largest textile mill in Central America (Manning Nash, 1955), indicates that while Cantel factory workers are in most respects intermediate be-

tween farm Indians and Ladinos, they still remain within the Indian pattern. (These data have kindly been supplied to me by June Nash.)

Second, it appears also that change is not at all slow. Changes in costume in Panajachel are illuminating on this point. As indicated elsewhere,⁵ there are virtually "fashions" in both men's and women's costumes, with a dynamic cor-

⁵ Sol Tax, *Penny Capitalism* (Washington, DC: Smithsonian Institution, No. 16, 1953), pp. 159, 202.

TABLE 3. Percentages of Food Consumed

	Cantel Farm	Cantel Factory	Cantel Ladino
Corn and lime	41.6	19.6	8.7
Beans	6.7	7.1	3.8
Paste, rice, bread	4.9	10.5	17.5
Potatoes, vegetables	7.6	8.8	13.2
Meat, fowl, and lard	9.9	23.4	23.2
Fish, seafood, etc.	—	0.7	—
Eggs	2.2	4.5	18.4
Coffee, chocolate	7.6	7.7	4.1
Condiments and sugar	18.5	11.0	6.2
Fruit	0.9	1.4	2.6
Sweets	—	0.7	0.5
Milk and cheese	—	4.6	1.8
Total	99.9	100.0	100.0

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responding to that in our society. Furthermore, the changes over a generation are at least as great in degree as among us. The change from skirts to shorts, or slacks, among our women, is certainly striking; but no less striking is the change among Panajachel men from the large black woolen overgarment to the bright red shirt and knee-length light blue skirt over long drawers. (Yet both are Panajachel costumes, not duplicated elsewhere.) Especially in a small society where costumes are uniforms and symbols of identity, one might expect a greater "conservatism."

Third, it seems that like us the Indians operate in terms of a complex of competing values, but the results are different partly because their ordering of the values is different from our own, and partly because the arena in which the values compete is different. The Indians live in small communities, where harmony and the good opinion of others is deemed necessary to life. Indeed, the Indians believe that without good relations with nature, with the supernatural, and with fellow men, health breaks down, prosperity is lost, luck is bad. Yet in a small society pretty much at a bare subsistence level, with a competitive economic system, it is impossible to rule out envy and the fear of envy; or accusations of greed, and the fear of such accusations. An Indian to whom fortune offers new alternatives must steer the old yet always new course between his individual needs and interests and those of the society, and must do so in a small community where all neighbors watch and where all are neighbors. The Indians respond to the challenge in part by establishing extraordinarily formal and impersonal social relationships, in a different way as stand-offish as (by reputa-

tion) are the privacy-seeking inhabitants of a London club. But they also respond to pressure by changing the proportions of their expenditures. In brief, they increase their expenditures for clothing and housing (as well as food) both for the pleasure of it and because miserliness is shameful; but much more than this they increase their contributions to religious, ritual, and community needs. Rich people take the more expensive obligations, and take them oftener. Indeed, they sometimes become impoverished on this account! This is the respect in which consumption can be conspicuous and also legitimate and safe. This could be considered a way of redistributing wealth except that in the process so much is consumed in the form of alcohol and perishable food that there is a considerable net loss; so although the rich man may go broke, no Indian gets a corresponding advantage.

A second somewhat legitimate but more dangerous way to change his pattern of consumption is to add to savings in the form of land, obtained either by purchase or as a pledge for money that has been lent. The difficulty here is that land only makes one richer and increases the pressures and the dangers. But land is highly valued in the community, and having much brings genuine respect and prestige. Since the landowner must hire field hands, he has opportunity to be generous in pay and conditions of work, and again he responds to pressure by yielding part of his wealth or income.

As one examines the data from Candel, where an important factory has long operated in an Indian community like Panajachel, one has the overwhelming impression that Indians change easily as much as they need to in order to

adjust to a changed environment, but that their own culture is both tough and resilient and not only does not fall to pieces, but follows a sort of law of parsimony, readjusting to change with a minimum of disturbance to its essential pattern. It is quite possible that this capacity is unlimited, and that Indians could adjust to far greater changes than we imagine if circumstances could be interposed in such manner that they could pick and choose and freely feel their own way.

6. CONCLUSION: ECONOMIC DEVELOPMENT

The changes that have occurred in Indian consumption (as well as technology and religion and social organization) at various times in the past four hundred years and their present outlook on life suggest that it need not be difficult to increase radically their level of living, their rate of saving, and their potential for capital formation. What needs to be done is to help the Indians to produce more to enable them to put an increased margin to productive use. But the way to be helpful is to recognize first that we do not know the answers, and then to try to learn from the Indians what the answers are by offering them as wide a range of alternatives as our—and their—ingenuity permits. I have argued that change is a function of realistic alternatives available and that the “reality” of the alternatives is a function of the perception of the Indians—what from their point of view and in their situation seems good and feasible. This is not simply a matter of the cultural differences anthropologists are fond of pointing up; these exist as differences in tastes, values, beliefs, per-

ceptions. It involves also the social situation in which every person finds himself; this in turn depends in part on the kind of person he conceives himself to be and what he perceives are the rewards and the penalties to himself of every alternative response. How in this circumstance can we expect somebody else to know and prescribe a solution to the individual? I take it that psychiatrists have long since pretty largely given up telling their patients what to do. But how much more difficult is it to prescribe for a community with its whole network of interacting perceptions, and particularly where the stranger from another culture cannot even understand what it means in this one to be a self-respecting person?

The conclusion I draw is not that we cannot help other communities of people, but only that we must keep them pretty largely on their own terms. To do this we must be prepared to learn at least as much from them as we bring to them. More than that, we must come to them in the frame of mind that admits it can never understand all the factors important in the situation, and so offers the widest variety of alternatives to see which might actually be suitable. I think of this analogy: I stand on a mountaintop and am about to empty a bucket of water over the edge, from where eventually it would reach the river below. I could now call in all sorts of wise men with their measuring instruments and their calculators and expect them to predict the exact course the bucket of water will take. Perhaps they would do fairly well; they might theoretically make a perfect prediction if they took as much time about it as would a monkey at the typewriter writing all the plays of Shakespeare. But if

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they were indeed wise men, I should expect at least one of them to suggest that we empty the bucket and let the water show the path, and then use our ingenuity to explain it.

Likewise there is a case for letting the Indians of Guatemala, or people anywhere else, work their own way to their own solutions, as we in our own history did ours. Our help then consists in working with them to provide the widest possible seemingly feasible alternatives: tools, new organizations, new markets, new items of consumption, new ideas. I am sure that the solutions developed by the Indians will surprise us. I shall close by recounting a single instance of an interesting and important change in an Indian pattern of consumption, which may make the point.

Among the Indians of Guatemala hard liquor plays a very important and on the whole perhaps destructive role.⁶ Some drinking, as among us, derives from individual and social disorganization. People drink because they should not. Most of it, however, is the contrary: people drink because they should, and it is a symptom of a good rather than bad adjustment to society. Liquor is sacred and used ceremonially on every

occasion of social and religious importance—baptising a child or a house; in courtship and marriage; at funerals; at planting and harvesting; in the inauguration of public officials; in some places even in the courtroom.

Each ceremony requires a quantity of liquor traditionally supplied by those in charge; Indians speak of an eleven-bottle ceremony, a twenty-two-bottle ceremony, and so on. The social pressure is great to do right by the Saints being honored, and it is difficult to reduce the traditional amount. At least one village in Guatemala was once economically destroyed by the system; the influenza epidemic of 1919 reduced the population drastically but not the number or the quality of ceremonies. In consequence the community eventually lost most of its land to outsiders.

In a particular ceremony the practice is such that an individual has no alternative but to drink his share. The participants are arranged in hierarchical order; a boy with a bottle and a single glass starts with the highest ranking person, and in turn fills the glass for each, which must be drained at a gulp so that the boy can pass on to the next. This is repeated over and over to the end of the ceremony.

Needless to say, well-meaning persons have tried to devise ways of changing these customs. One thinks of substituting soft drinks; but the Indians will not. And so on. After completing my studies in Guatemala I had occasion to live in an area of neighboring Chiapas, in Southern Mexico, with the so-called Chamula Indians, who are closely related to those of Guatemala. Here the Indians have very similar customs; indeed they seem to use liquor in even more ceremonial contexts than in Pana-

⁶ Expenditure for liquor for ceremonial purposes in Panajachel constitutes 4 percent of all community expenditures, including even the value of the Indians' labor, and 11 percent of all expenditures made outside the local community. All expenditures for clothing are less than four times as much; and for all housing and utensils and supplies and tools for home and farm, the Indians spend in cash only 60 percent more than they do for liquor for ceremonial purposes. The social cost is much greater if one takes into account that Indians frequently continue to drink, to cure hangovers, and the loss in both time and money can be very large.

jachel. They have the same method of passing from one person to the next a single glass.

But there is one little change. In Chamula every man carries under his cloak an empty bottle and a little tin funnel. When he receives the glass of liquor he may either gulp it down or pour it into his bottle. The liquor in the bottle he can then use later to perform his own ceremonial obligations.

If I now had the task of improving conditions in Panajachel, I think I would want to take a number of the Indians from there to visit the Chamulas in Chiapas, with the thought that they might be as intrigued as I with the solution of the funnel and introduce it in Panajachel. But it would be illusory to expect that the new technique would actually be successfully transferred. And if the Indians did not take it up, I would be foolish indeed to think of the result as a failure, or to blame the Indians for not taking what I now think is a good alternative. If I were able to discover why Panajachelenos rejected it I would of course see why it was not a good alternative after all, and never had been, even when I thought it was.

But by this method and with this attitude I would expect to find the Panajachel Indians developing some solution that would be suitable, just as the Chamulas developed this one. In brief, the hypothesis on which I operate is that developing communities need the freedom of the marketplace and a good dis-

play of merchandise from which to choose, and no salesmen.

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COMMENTS ON "CHANGING CONSUMPTION IN INDIAN GUATEMALA"

Lincoln H. Clark

NOTE ON THE ROLE OF THE SALESMAN IN ECONOMIC DEVELOPMENT

Professor Tax concludes his interesting report on "Changing Consumption in Indian Guatemala" with the hypothesis: "Developing communities need the freedom of the market place and a good display of merchandise from which to choose, and no salesmen." After the general discussion of his paper, Professor Tax, in private conversation with the writer, amended this hypothesis by substituting the word "many" for "no" preceding "salesmen." Accordingly we are now in substantial agreement.

The role of the salesman in economic development has been frequently overlooked. The array of choices in a market place does not occur solely as the result of impersonal economic forces. A human force determines the array; this force may be given a euphemistic label such as "marketing force" or may be categorized by the apparently opprobrious term "salesman."

When the salesman has not been ig-

nored in the literature of economic development he has frequently been regarded as a symbiotic parasite on the economy. This could be true in an unchanging economy operating in accordance with the conceptual rules of a purely competitive system. Without salesmen, however, any real economy would disintegrate like a society composed only of females without any proposing males to be disposed of. The major consequence of a salesman who sells is to initiate economic change. Nothing of much significance in an economy occurs until someone makes a sale. The cost of the salesman is one of the prices that must be paid for a dynamic economy. The explanation of the frequent criticisms of the salesman is that his activity and its consequences do not always conform to the evaluator's scale of values. Moralistic criticisms of the salesman are moralistic and not economic.

Professor Tax generalizes from his observation of Guatemalan Indians that "to alter consumption patterns one need only make available new alternatives

that from their point of view are worth the cost." (Let it be noted in passing that "one" is but another symbol of "salesman.") This widely unappreciated truism was corroborated by an experiment conducted last summer by the writer among some Indian Indians. The experiment also illustrates a method for determining which new alternatives buyers consider "worth the cost." About one hundred indigenously manufactured products were stocked on shelves in a five-ton truck. This rolling store was routed to several villages and small towns in the Punjab, Uttar Pradesh, and Rajasthan. In a few villages only soap and matches were purchased—products that have been incorporated in consumption patterns for decades, if not for centuries. In other villages people bought wallets, lanterns, men's socks, toys, mirrors, combs, glassware, and tooth brushes. These products were bought for many reasons—in some cases they were innovations, in other cases they were lower priced, better quality, or more convenient to buy than existing alternatives.

It would have been interesting, but time was not available to seek data to quantify the relationship of new product offerings and total purchasing power, in contrast to its reallocation. Perhaps such data could be obtained by careful interviewing. For example, there was a lad who had admired the eight-rupee carom boards in the mobile store when it first visited his village and who purchased one on the store's second visit. What was the source of the eight rupees? Did they come (1) from substitutions in his "planned" consumption pattern; (2) from begging, borrowing, or stealing; (3) from savings withdrawn from some productive activity; (4) from

some hidden hoardings; (5) from payment received for productive employment by reducing his leisure time with or without the displacement of some other worker or; (6) by some combination of the preceding sources? It would also be interesting to ascertain the influence of the salesman on the choice of the financing method.

As a result of the field experiments a program was formulated to canvass eighteen hundred villages every two weeks with thirty-five mobile stores. While this sample may not fairly represent the 380 million Indians in five hundred thousand villages, it should be meaningful with respect to those millions who reside near the hard-surfaced roads that are traversable by five-ton trucks. The information is designed to be used in detailing India's industrialization program and to be obtained without cost by the revenue from the product sales. The details for this program are contained in *A Market Development Program for Small Industry Products* (New Delhi, India: Government of India, Ministry of Commerce and Industry, 1955).

It may be noted that such presently popular developmental schemes as irrigation and power projects, railroads, and steel plants are not necessarily the best type of income-generating devices for underdeveloped countries. Investment in better marketing facilities and methods may often prove more productive.

Paraphrasing Professor Condliffe's reference to trade as the vehicle to economic development, this Indian experiment refocuses attention on the trader, or salesman, as the driver of the vehicle to economic development.

CONSUMPTION CHOICES AND ECONOMIC CHANGE: THE CASE OF PUERTO RICO¹

Simon Rottenberg

Very substantial change has occurred in Puerto Rico, especially in the last half century, and this change has occurred at a relatively rapid rate.

I propose, in this paper, to examine some of the facets of the changes that have occurred and to discuss the impact they have had upon the consumption choices of Puerto Ricans.

People who are familiar with the island in the mid-twentieth century need only refer to the account of Puerto Rico published by Colonel Flinter of the General Staff of the Spanish army in 1834,² to notice that there have also

been some remarkable facets of stability of behavior.

In any society, and in any period that is not too long, the ratio of things changed to things kept intact is small.

When it is said, therefore, that change has occurred in Puerto Rico with relative rapidity, this should be understood to mean simply that this ratio is higher in Puerto Rico than in many other poor countries where tradition has enormous power and special sanctions enforce the persistence of past practice.

THE CHARACTERISTICS OF CHANGE

Change in Puerto Rico has had the following major characteristics: (1) In-

² George D. Flinter, *An Account of the Present State of the Island of Puerto Rico* (London: Longman, Rees, Orme, Brown, Green and Longman, 1834).

¹ Quantitative data on economic and social phenomena are available in greater volume for Puerto Rico than for other low-income places and their quality is better than in these places. This is especially true for the period since 1900, when American government agencies have had a hand in the maintenance of statistical standards and in providing funds for the production of statistics.

Neither in quantity nor quality, however, are the data as good as those that are available for the United States or some of the countries of Western Europe. Where there is quantitative evidence to substantiate statements appearing in this paper, they will be cited. I shall have to rely in part, however, on judgments based on the informal experience of four years of living in the island and I shall also draw upon published observations based on the same kind of experience of others.

come per head of population has risen. (2) The structure of the economy has altered. (3) Population has grown rapidly. (4) Socialized consumption determined by government has increased. (5) Women have been "liberated." (6) Opportunities for movement between social classes have proliferated, that is, social mobility has increased.

I shall discuss these changes *seriatim* and shall then examine the implications some of them have had for consumption choices.

INCOME HAS RISEN

The first comprehensive and reliable estimate of Puerto Rican national income was that of Daniel Creamer for the years 1940–1944.³ Annual estimates have been made since then by one or another agency of the Insular government. These estimates show income per head in constant prices to have become successively larger in each year. The persistent increase over this period is explained in part by heavy expenditures in the island by the federal government for military construction in the early years of the decade of the 1940's and by the large-scale out-migration to the mainland after 1945, which has slowed the growth of population, despite very high net reproduction rates, and has induced a substantial in-flow of remittances from migrants to their island kinfolk.

No very good income estimates were made before 1940. Puerto Rico has always been heavily engaged in external trade and some measure of broad trends in economic welfare might be constructed by computing imports per head

and adjusting for price changes. This kind of a measure would be very rough, however, because of variation in the composition of island-produced and imported goods since the turn of the century. The incorporation of Puerto Rico into the United States tariff system by act of Congress in 1900 cheapened imports from the mainland, which had been previously obstructed by the Spanish tariffs, and caused them to displace island-produced goods fabricated by artisans in small workshops.⁴

It would be hard to find a student of the island's economy, however, who was not convinced, on partial evidence, that Puerto Ricans are better off, in an income sense, on the average, than they were in the nineteenth century.

STRUCTURE OF THE ECONOMY HAS ALTERED

Sugar is more important. This is the most significant change in the structure of the economy under the American regime. The value of sugar exports in the last years of Spanish rule was only one third that of coffee.⁵ The average tonnage of sugar exports was about 60,000 for the 1892–1896 period;⁶ it has risen to about one million tons in recent years. Compared to about 20 percent of all exports in the late nineteenth cen-

⁴ Clark and associates estimated a more than fivefold increase in per capita external trade at constant prices between 1901 and 1929. Victor S. Clark *et al.*, *Porto Rico and Its Problems* (Washington, DC: The Brookings Institution, 1930).

Seamstresses, tailors, and shoemakers, for example, had been important occupations that tended to be displaced by imported ready-made goods.

⁵ Frank H. Hitchcock, *Trade of Porto Rico* (Washington, DC: Government Printing Office, 1898), p. 21.

⁶ *Ibid.*

³ Daniel Creamer, *The Net Income of the Puerto Rican Economy, 1940–1944* (Rio Piedras, Social Science Research Center, University of Puerto Rico, undated).

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tury, sugar recently has accounted for about 60 percent of exports from Puerto Rico.⁷ Meanwhile, the output of coffee has diminished even absolutely.

The tariff arrangements accompanying the coming of the Americans also account for this change. The opening of a duty-free market in the United States made sugar cane growing and milling an attractive investment and American and local capital flowed into the industry rapidly. Almost all the coastal land, much of it previously devoted to grazing cattle, and large areas of sloping hillside came to be put into cane.

As the sugar coasts became economically relatively more important than the coffee, tobacco, and food crop interior highlands, people were attracted to the coasts. In the beginning they came only for the seasonal harvest and then returned to the highlands, but, more and more, as the years passed, they permanently settled in the lowlands.

A second structural change of the economy is the relative growth of the cities and towns. The urban population was 14.5 percent of the total in 1899 and 30.3 percent in 1940.⁸ The movement to the towns was induced by higher earning opportunities there than in the country, as the growth of population, especially in the rural areas, created a class of rural workers whose marginal product progressively fell. In the towns, these migrants sometimes found employment in the new small factories, or as domestic servants, but large numbers were employed on their own account in the production of serv-

ices of very great variety.

Thirdly, communication is easier. Until the turn of the century, communication between the towns of the island was arduous and time-consuming and the townspeople seem to have passed lives of relative isolation. The special Commissioner of the United States to Puerto Rico, who heard testimony in all parts of the island, reported to President McKinley in 1899 that "roads, with few exceptions, were bad."⁹ After four centuries of colonization and government, the Spaniards left 275 kilometers of surfaced roads; even in their first eight years, the Americans built almost 800 kilometers of additional roadways. By 1929, there were about 1800 kilometers of surfaced highways¹⁰ and, since then, a large number of roadways have been constructed by the American military forces and by the Insular government, partly with federal grants-in-aid.

Along with the expansion in the mileage of highways, there has been a rapidly increased number of automotive vehicles in the island, especially since the end of World War II, and an expansion in numbers and improvement in quality of automotive service establishments. A large number of Puerto Rican veterans of the second World War used their accumulated earnings, dismissal pay, or GI Bill loan privileges to acquire vehicles for operating a kind of interurban jitney service.¹¹

All these causes, taken together, have cheapened the cost of movement in the

⁹ Henry K. Carroll, *Report on the Island of Porto Rico* (Washington, DC: Government Printing Office, 1899), p. 38.

¹⁰ Clark, *et al.*, *op. cit.*, pp. 342-344.

¹¹ To the extent that income growth has been the result of highly transitory, wind-fall federal payments like these, consumption patterns are significantly affected.

⁷ *Ibid.*, pp. 8 and 21; and Harvey S. Perloff, *Puerto Rico's Economic Future* (Chicago, University of Chicago Press, 1950), pp. 67-68.

⁸ Perloff, *op. cit.*, p. 50.

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island and have tended to convert differentiated factor and product markets to a single integrated market.

The relative growth of the sugar coasts, already referred to, has drawn upon labor supplies in the highlands and, by offering more attractive employment, have created a willingness to move. To this should be added the heavy movement of people to and from the mainland since 1945. The enlarged wartime production of aircraft and air crews cheapened postwar air transport between the island and New York. Net outmigration rose from a trickle in previous years to a postwar flood that ranged from about 15,000 to about 65,000 per year. The net figures do not tell the whole story; about three persons went North temporarily for every one that stayed.

All these influences have made over a sedentary, isolated people to a highly mobile one, with outside culture contacts, and has tended to introduce an ethical system oriented to the individual into a society that has been traditionally family-centric.

POPULATION HAS GROWN RAPIDLY

Population and, therefore, density, have more than doubled in the last half century. The census of 1899 counted 953,000 inhabitants;¹² by 1950, the number had risen to two and a quarter million. The increase is the result of a persistently high crude birth rate and a falling death rate, reflecting improved facilities for sanitation and an increase in the share of resources devoted to

medical care. The combination of these two trends yielded a rate of natural increase that has increased in each decennial period since the late nineteenth century and is now one of the world's highest.¹³

SOCIALIZED CONSUMPTION HAS INCREASED

Because income estimates earlier than 1940 are not reliable, it is not possible to estimate the magnitude of differences in proportions of income captured by the State for expenditure for public purposes. Partial evidence indicates, however, that this proportion has risen greatly. In addition to this increase, more revenues are also derived by the payment into the Insular treasury of revenues from federal excise taxes on Insular products consumed on the mainland and from federal customs duties on foreign imports into the island. Some public services that were a charge on the island under the Spaniards are maintained at federal expense.

As a result, the process of choice-making is much more highly collectivized now than formerly. Decisions about consumption on which the community's income is spent have always been made by both private persons and public authorities. The criteria upon which the public authorities make *their* decisions are now, however, much more important than they used to be.

WOMEN HAVE BEEN "LIBERATED"

Women have traditionally occupied a subordinate status in Puerto Rican society. Their rights at law were inferior

¹² For a full discussion of population changes, see Perloff, *op. cit.*, ch. 12.

¹² US War Department, Office Director Census of Porto Rico, *Report of the Census of Porto Rico, 1899* (Washington, DC: Government Printing Office, 1899).

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to those of men and social rules restricted permissible behavior for them far more than for men. "Almost every upper-class man," it was reported, "says that women are 'naturally' inferior mentally, emotionally, and physically, and there is no remedy for this inferiority. They are therefore, inferior socially and economically."¹⁴

Although some aspects of this pattern still persist, important changes have occurred. The law has been revised in a number of ways to create more equality between men and women; women have now, much less than before, a chattel status; and the pursuit of careers by them is looked upon with less disfavor.

SOCIAL MOBILITY HAS INCREASED

Finally, there has been a significant change in the structure of classes. Formerly, power was a monopoly of the landed gentry of the upper classes. Between them and others there was a great, unbridged abyss. There were "good" families and the rest of the inhabitants. The status one occupied in society was largely a function of family origin. Social climbing and falling occurred infrequently and with difficulty. The occupational role a person played was a function of his class.

Some of this still persists, but, especially in this century, an enormous leveling process has operated. The franchise is open to all and is widely used. Political power is more equally distributed. Education is also more equally distributed and this has increased the number of channels for movement be-

tween classes in both directions. A new, broad, and powerful middle class has been created. As the number of different classes has increased, the magnitude of the distance between each sequential pair has diminished and the cost of social movement has diminished.

IMPACT ON CONSUMPTION

These are the significant changes that have taken place in Puerto Rico. They are not isolated from one another but are intimately interrelated. Even what appear to be purely social phenomena are part of the process of economic growth or change either in a causal or a consequential sense. I shall pass now to a discussion of the way some of these changes have affected consumption. Some of what I have to say about consumer behavior in Puerto Rico will be recognized to be also descriptive of other poor countries.

Most studies of family income and expenditure display the familiar commonplace of Engel's Law. At lower-income levels, a relatively high proportion of expenditure goes to food; among higher-income families, this proportion falls and other expenditures become more important. For example, a study of five thousand wage-earning families in 1941-1942 showed families making less than two dollars per week devoting 73 percent of expenditures to food; for those making twenty dollars and over, this percentage fell to 50.¹⁵ But I shall not pursue the subject of how changes in income have affected consumption. For one thing, conclusions based on cross-section studies cannot be safely

¹⁴ Charles C. Rogler, *Comerio* (Lawrence, Kansas: University of Kansas Press, 1940), p. 84.

¹⁵ Alice C. Hanson and Manuel A. Perez, *Incomes and Expenditures of Wage Earners in Puerto Rico* (Puerto Rico, Department of Labor, Bulletin No. 1, May 1, 1947), p. 36.

used to judge the consequences of changing aggregate income.¹⁶ For another, I want to comment on other distinctive facets of life and behavior in Puerto Rico that have been less frequently discussed.

SOCIAL MOBILITY CONSUMPTION EFFECTS

In many parts of the world, and especially in the United States, society has been characterized for a long time by the existence of channels for social mobility, in both upward and downward directions, movement has taken place at a rapid rate, and people have been relatively highly homogeneous with respect to consumption aspirations. In these circumstances, it is not so important to search for the influence of class status upon consumption.

This is not so in such places as Puerto Rico. There, society has been much more rigidly class-structured; opportunities for movement among classes have been fewer and the volume of movement has been much smaller; the constraints imposed by class status upon occupational choice and other aspects of social behavior have been more powerful; and, especially in very recent times when leveling changes have taken place, the desire to move upward socially is much more deeply felt.

The social class status people have occupied in the past, the status they

currently occupy, and the status they expect or aspire to occupy in the future have a powerful influence upon consumption choices.

One of the aspects of this set of circumstances is the desire to acquire goods or services that carry prestige. Their possession conveys status upon their possessors. By spending income in ways customarily associated, by the community, with the class next above one's own, one tends to climb the status ladder. Expenditure patterns become a device for social mobility. Similarly, they are also a device for maintaining achieved status; people of a given class must also spend in ways consistent with their status, lest they fall on the scale.

The desire to climb is deeply felt in Puerto Rico and it has had a large impact on consumption practice. Its specific form varies from time to time, from place to place, and from class to class. In the nineteenth century, for example, shoes played this role. A committee of businessmen in the city of Ponce estimated for Commissioner Carroll in 1899 that seven of every nine persons in the island were customarily barefoot.¹⁷ And observers have written of the not uncommon case of rural people, walking to town, who would carry their shoes until they reached the town's outskirts, and there would put them on their feet to comply with the more exacting requirements of urban customs. But shoelessness was permissible only for the lower classes; the possession of shoes was the mark of having risen. More recently, the possession of refrigerators has played the same role. Roberts and Stefani report, from a study done in 1946: "It is a matter of common knowledge that some housewives

¹⁶ As the income average has risen, something has also happened to its size distribution. If income is now more equally distributed than it once was—or less—aggregate consumption patterns will have been affected. The data are not good enough, however, to say anything with confidence about changes in the distribution of income in Puerto Rico.

¹⁷ Carroll, *op. cit.*, p. 51.

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keep the refrigerator in the dining room because it is the best and often the most important piece of equipment or furniture in the houses";¹⁸ Thus visitors to the home not only may see this physical symbol of the family's social progress but passers-by may also see it through the open door. Still another example is the preference for consumption of imported foodstuffs, and Roberts and Stefani remark on "the high prestige value such (canned) fruits appear to have in comparison with that held by far superior fresh native fruits."¹⁹

Three other examples may be mentioned: the employment of domestic servants; legal marriage; and the completion of some years of formal schooling. All are consumption items that are important instruments of social climbing.

The performance of some household

¹⁸ Lydia J. Roberts and Rosa Luisa Stefani, *Patterns of Living in Puerto Rican Families*, (Rio Piedras, Puerto Rico: The University of Puerto Rico, 1949), p. 65.

¹⁹ *Ibid.*, p. 176. Puerto Rico is, of course, a heavily trading island. For a discussion of the income propensity to import see Robert L. Sammons and Belen H. Cestero, *Balance of External Payments of Puerto Rico, 1942-1946* (Rio Piedras, Puerto Rico: Social Science Research Center, University of Puerto Rico, 1948).

In 1939-1940, the value of imports into Puerto Rico was almost half of net income; for the United States in the same year, it was 3 percent. In part, this difference reflects the high degree of specialization in the Puerto Rican economy and its complementarity with the mainland economy. To this extent, trading simply means that each achieves the gains of division of labor and exchange. In part, however, it also reflects a "taste" for imported goods because it is more prestigious to have them and also an undervaluation of locally produced goods in some qualitative sense.

functions is customarily considered to be below the station of a middle-class housewife; she will resist them lest she fall and women of lower classes who aspire to climb will use the employment of servants as a lever.²⁰

A large number of families are produced by informal though stable alliances of men and women without legal marriage ceremonies, either civil or religious. These are called "consensual unions" and it has been estimated that about one third of all Puerto Rican families are of this kind. The explanation for this behavior must be complex, but it is usually said that marriage ceremonies are foregone in order to save the price of the ceremony. To the extent that this is a partial cause, the ceremony also becomes a consumption good. Consensual unions are, however, fit only for those of the lower orders of society; those who are moving upward socially must incur the expense of marriage.

The completion of some level of

²⁰ Roberts and Stefani found 1.6 servants per 100 families for the \$500-999 income class; 14.4 for the \$1000-1999 class; and 97.6 for the \$2000 and over class, *op. cit.*, p. 282.

The number of domestic servants counted in censuses of occupations and in surveys such as that of Roberts and Stefani is understated because of the convention by which middle-class families take into their homes children of the poor, nominally to educate them and to give them a disciplined upbringing, but actually to perform domestic service. The better-off family acquires the child's services in return for its food and lodging and the poor are relieved of the cost of the child's maintenance. The expression of this preference for domestic servants seems to be held in check by an apparent (the evidence is not clear) increase in the price of domestic service, relative to other prices, as the economy has grown.

schooling is one of the most important channels for social rising. There is respect and reverence for learning in the island, although sometimes the people lose sight of the difference between true scholarship and the possession of certificates and diplomas as physical and objective symbols of it. The level of schooling that conveys prestige varies from place to place and from time to time. In the rural areas, it may be five grades; in the interior towns, high school; and in San Juan, a university degree. In any given place, the standard will vary from class to class. A boy may climb out of the slum class by finishing high school, but a middle-class boy with aspirations must complete university training. As the average number of years of completed schooling has risen over time, so have the numbers whose completion is required for social aspirations to be achieved.

The influence upon consumer preference patterns of customary notions of what carries prestige is, of course, not unique to Puerto Rico. Mandeville wrote in his *Fable of the Bees* of "the wife of the poorest labourer [who] half-starved the family to get a second-hand gown," and Adam Smith took account of custom and convention in defining consumption "necessaries,"

By necessities I understand, not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without. A linen shirt for example, is, strictly speaking, not a necessary of life. The Greeks and the Romans lived, I suppose, very comfortably, though they had no linen. But in the present times, through the greater part of Europe, a creditable day-labourer would be

ashamed to appear in public without a linen shirt, the want of which would be supposed to denote that disgraceful degree of poverty, which, it is presumed, nobody can well fall into without extreme bad conduct.

Custom, in the same manner, has rendered leather shoes a necessary of life in England. The poorest creditable person of either sex would be ashamed to appear in public without them. In Scotland, custom has rendered them a necessary of life to the lowest order of men; but not to the same order of women, who may, without any discredit, walk about barefooted. In France, they are necessities neither to men nor to women. . . .

Under necessities, therefore, I comprehend, not only those things which nature but those things which the established rules of decency have rendered necessary to the lowest rank of people.²¹

²¹ Adam Smith, *The Wealth of Nations*, Sixth Cannan edition (London: Methuen & Co., Ltd. 1950), vol. II, bk. V, ch. II, pp. 354-55. Another example appears in Anthony Trollope's account of the meals served him in Blundell Hall, an inn in Kingston, Jamaica, in *The West Indies and the Spanish Main* (New York: Harper & Brothers, 1860), p. 25: "I used to wish that the patriotic lady who kept [the inn] could be induced to abandon the idea that beefsteaks and onions, and bread and cheese and beer composed the only diet proper for an Englishman. But it is to be remarked all through the island that the people are fond of English dishes, and that they despise, or affect to despise, their own productions. They will give you ox-tail soup when turtle would be much cheaper. Roast beef and beefsteaks are found at almost every meal. An immense deal of beer is consumed. When yams, avocado pears, the mountain cabbage, plantains, and twenty other delicious vegetables may be had for the gathering, people will insist on eating bad English potatoes; and the desire for English pickles is quite a passion. This is one phase of that love for England which is so predominant a characteristic of the white inhabitants of the West Indies."

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Indeed, we need not search so far to find preference patterns that are partially determined by the desire to acquire prestige; we have them ourselves. What is different about the Puerto Rican case is that there it appears to be much more explicit and that consumption choices are so intimately related to the class stratification of society and to the recent changes in the social structure. Consumption patterns are not only class-oriented but they are also instruments for effecting mobility. Consumption choices and status thus determine one another.

It is interesting to observe, however, that many of the prestige-bearing choices are also functionally useful.²² To wear shoes, for example, was to protect oneself from *ucinariscis*, a disease which induced anemia, and which was caused by hookworms that passed from infected soil through the feet of shoeless persons. In the early years of this century less than 10 percent of the rural population was said to be entirely free of the disease.²³ To form families through marriage rites was to impose legal responsibility upon the father for the maintenance of children produced by the union, to increase the cost to him of children and, therefore, to tend to diminish the number of births in an island whose birth rate and rate of population growth were among the world's highest. To have a refrigerator was to have facilities for the preservation of food in the conditions of the semitropics. And attendance at school raised educational levels in a community

²² I am indebted for this insight to Margaret Reid.

²³ Walter E. Weyl, "Labor conditions in Porto Rico," in United States Department of Commerce and Labor, *Bulletin of the Bureau of Labor No. 61* (November, 1905), p. 795.

whose educational needs were desperate. In 1899, only 8 percent of children between 5 and 17 were at school and only 23 percent of persons over 10 were able to read.²⁴

CONSUMPTION ASPIRATIONS

The desire for social mobility not only gives a particular structure to Puerto Rican preference schedules, but also causes the aggregate of consumption aspirations to be high. This is accentuated by the changes that have diminished geographic isolation and those that have drawn the island into the American economy. Both of these have given the people access to goods and services of very much greater variety than when life was more quiet. Fuller knowledge has whetted appetites.²⁵

Consumption aspirations run so high in Puerto Rico that there seems to be no question here of lagging accommodation of expenditures to income changes. If anything consumption leads.

A 1951 study of 630 upper-income (\$2000 and above per annum) Puerto Rican families by Maccoby and Fielder found, for example:

In the United States additions to and withdrawals from liquid assets are more

²⁴ *Report on the Census of Porto Rico, 1899, op. cit.*, pp. 75, 79.

²⁵ I do not know what can be said about the progress of aspiration levels over time. It seems reasonable to assume that standards do not out distance achieved levels by "too much," although the magnitude of the differential between them is purely not always the same. As real income rises aspirations should also be expected to rise, the one keeping pace with the other. I suppose that this has been so in Puerto Rico. The variety of goods that become more easily available and demonstrable to Puerto Ricans, when the island was assimilated to the American economy, is believed to have had a significant positive influence upon aspirations.

common as forms of saving and dissaving than in Puerto Rico. In Puerto Rico, this form of financial activity seems to be replaced to some extent by borrowing and repayment of debt, both of which are more common at all income levels than in the United States.

Puerto Ricans carry a considerably larger volume of current debt than people of similar incomes in the United States. They make greater use of installment borrowing when they buy durable goods.

Puerto Ricans have few accumulated liquid assets. . . . Those who do have some have much smaller amounts, on the average, than their (income) counterparts in the United States.

People at the \$2,000–\$3,000 level in Puerto Rico buy durable goods much more frequently than people of similar income in the United States.

Puerto Ricans at the \$2,000–\$3,000 income level feel themselves to be under considerable financial pressure to maintain what they believe to be a suitable standard of living. Their economic aspiration level is very high.²⁶

I shall not here repeat the quantitative materials that appear in the Maccoby-Fielder volume to support these conclusions. Both authors had previously worked on the consumer finances surveys of the Survey Research Center and they were, therefore, in a position to establish definitional uniformities that would make comparative statements tenable.

While the Maccoby-Fielder materials

²⁶ Eleanor E. Maccoby and Frances Fielder, *Savings among Upper-Income Families in Puerto Rico* (Rio Piedras, Puerto Rico: University of Puerto Rico Press, 1953), pp. 69, 70.

are only for above \$2000 income families, spending in anticipation of earning is known to be also commonly practiced by the wage-earning classes. Installment selling of watches, rings and other such goods at factory gates on paydays is a common retailing practice.

A survey of incomes and expenditures of wage-earners' families in 1952 showed aggregate dissaving and dissaving for all income classes up to the \$2000 and over class.²⁷

The evidence seems to be clearly in favor of the proposition that, if anything, Puerto Ricans "overadjust" to income changes. Their spending behavior suggests that they have a continuous anticipation of rising income.

High levels of aspiration and advance buying have a favorable impact on economic growth. Workers who have contracted debts for purchase of durable goods in Puerto Rico are said to behave responsibly at work and to make themselves available for work regularly and punctually; those who have not are said to be less serious workers. Wants have stimulated work.

Prestige-oriented expenditure patterns and high consumption aspirations, however, also have a depressive effect in the economy by restricting saving and, therefore, investment. Among the upper- and high-income classes sumptuous living and gracious hospitality are highly prized. Families of this class lose caste if they do not acquire elaborate homes and automobiles or spend freely in entertainment. As a result, income that might otherwise be saved and become a

²⁷ Puerto Rico Department of Labor, *Survey of Incomes and Expenditures of Wage Earners' Families in Puerto Rico in 1952* (San Juan, October 28, 1954), mimeo.

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source of investment goes to the purchase of luxury goods.²⁸

CONSUMPTION EFFECTS OF URBANIZATION

Expenditure patterns have been substantially affected by the progressive urbanization of Puerto Rico. In the towns, people feel the full impact of the demonstration effect. They have access to objects of expenditure that are not available in the rural areas, such as certain kinds of recreation facilities. They are subjected more to the re-educative processes of advertising. They also incur costs such as those for transportation that they do not encounter in the country. The same is often true of housing. In the country areas, in both the lowlands and the highlands, it is common for people to construct makeshift dwellings of stray pieces of materials on land on which they squat, or to be sometimes provided with free housing by their employers. While squatting also occurs in the towns, especially among the very-low-income families, here one is much more likely to pay rent either for a house or its lot or for both.²⁹ In

²⁸ In one respect, at least, however, the effect of luxury spending is salutary. One of the "required" objects of consumption for the upper classes is travel, usually to the United States, but sometimes to Europe. Travel has made possible a breakthrough in the thick crust of insularism, of almost exclusive preoccupation with the island and the details of life on it. Travel has taught perspective and turned sights upon new horizons; it has given people access to new and useful technical knowledge.

²⁹ Roberts and Stefani (*op. cit.*, p. 291) reported for families with annual incomes of \$500-999 the following differentials:

any event families moving from the rural areas to take up residence in the towns find it especially necessary to spend a larger proportion of their money expenditures for housing. The proportion of expenditures going to housing, therefore, rises sharply and this seems to be made up by increased dissaving, presumably in anticipation of some higher future income³⁰

THE DISTRIBUTION FUNCTION

Rising income in the economy has an interesting consequence for the performance of the distribution function. Among the poor, only enough is bought at a time to meet the immediate needs of life. Packaged goods are broken by retail shops and very small unit sales are made.³¹

The movement of population in the direction of the coastal lowlands and the towns has reduced food income in kind and forced people to resort to the market for a larger part of the food they consume. Tiny plots devoted to the production of root crops and other pro-

	Urban	Rural	
Own house	55.7	70.7	
Rent	43.5	11.3	
Free use	0.8	18.0	

Percent of money income for:	Rural		Rural
	Urban	Lowlands	Highlands
Total expenditures	133.8	114.6	120.3
Food	78.5	79.8	85.1
Housing	12.3	.9	.6

³⁰ The Hanson and Perez study, for example, found for \$6.00-7.99 weekly income families:

Percent of money income for:	Rural		Rural
	Urban	Lowlands	Highlands
Total expenditures	133.8	114.6	120.3
Food	78.5	79.8	85.1
Housing	12.3	.9	.6

³¹ Rogler, *op. cit.*, p. 55, says that, in one hour of a day in 1935, twenty-nine items in twenty sales were purchased in a grocery and general store of Comerio. Of these, eight were in one-cent units, nine were of two cents, and twenty-four of five cents or less.

visions are common in the highlands; they are almost never seen on the coastal flatlands, which are virtually completely given over to commercial crops—sugar especially, but also pineapples and coconuts.

In these circumstances, the shops perform a storage function which, in richer countries, they share with the home. The fundamental cause for this specialization of storage was discerned by Clark and his associates. "The 'jibaro' [Puerto Rican rural inhabitant] has no place to keep provisions from mold, decay, or insects, even from one meal to another."³² As income rises, and food preservation facilities are acquired, homemakers take on a share of this function and are able to take advantage of the economies of quantity purchases.

Other changes have occurred in the institutions of internal trade.

The altered position of women has made it socially acceptable for middle-class housewives to do their own shopping, rather than have it done by proxy by their servants, and this has caused shops to tend to displace the public markets as retail outlets.³³

The diminished money and real costs of geographic movement have tended to displace the rural peddler who used to supply the isolated rural areas with soft goods. It has also tended to change the character of interior outlets and to cause them to become supplements to the city stores. Important buying is reserved for

the shops of the larger towns. Since these now serve larger markets, specialization has made progress among them.

The improved contacts with the outside world have diminished the monopoly power of the San Juan importers and wholesale merchants and jobbers and have increased the use of mail-order houses.

And the vast increase in population has driven people into self-employment as hucksters and petty merchants in the towns and proliferated commercial establishments.

CHILDREN AS CONSUMPTION GOODS

It has already been noted that the birth rate has been persistently high in Puerto Rico for many years. A theory of numbers of population could be constructed on the conventional model in which the individual seeks to equate costs and revenue at the margin. Such a theory would, like its counterparts explaining other kinds of economic behavior, incorporate assumptions about preference schedules, and these can also be examined. It seems to be true that Puerto Ricans have a strong "taste" for children over alternative objects of consumption and this goes a considerable way towards an explanation of high birth rates. It is hard to know what would constitute proof of such a judgment, but the genuine affection shown to children, the attitude of permissiveness with which they are handled and the disinclination to submit them to discipline, and the considerable sacrifices of other things that families make in order to have them are clearly seen by informal observation. The taste for children is reinforced by an important rule of the

³² *Ibid.*, p. 425.

³³ The changed position of women has also had the effect of permitting more of them in the middle classes to enter the labor market and make themselves available for work. As they contribute more to family income, they also participate more in the making of spending decisions. This must surely have affected spending patterns.

CONSUMPTION CHOICES AND CHANGE: PUERTO RICO

code of the male community, which puts enormous psychic pressure upon married men to have first children quickly in order to prove their capacity.³⁴

The age structure of the population has had the flat pyramidal shape characteristic of an average young age population.³⁵ This has also affected consumption choices by emphasizing heavily the goods and services consumed by the young. But in the last decade and a half a drastic fall in death rates has started to increase somewhat the proportion of adult and old persons in the population.

THE GROWTH EFFECTS OF INSTITUTIONAL CHOICE-MAKING

The real increase in public revenues, and the resultant substitution of public for private decisions about spending, have probably increased the proportion of resources put to education and medical care. A large part of public expenditures goes to these objects. The use of free, State-administered medical services is very common and this reduces family medical expenditures to a fraction of what they would otherwise be. Schools have been pushed outward into the rural areas and upward into the higher grades, and very great progress has been made at all grade levels in enrolling larger

³⁴ Children also provide old age insurance of sorts. The Puerto Rican family is a tightly knit organism; loyalty to kinfolk and respect for parents run strong in it. To have children, therefore, is to secure a source of sustenance in the later years of life.

³⁵ In 1890, 34.4 percent of the population of the United States was 14 or less; in Puerto Rico in 1899, the percentage was 43.9. In 1940 it was 25.0 percent in the United States and 40.6 percent in Puerto Rico. Perloff, *op. cit.*, p. 51.

numbers of eligible children. Within the category of community expenditures for education, especial emphasis has been put on the University and therefore, on those who will play leader roles.

The poverty of natural resources in Puerto Rico has caused growth to be especially dependent upon the quality of its human resources. In the end, income per head will rise in the island in proportion as Puerto Ricans become like Swiss or like Iowans. Formal education and medical care are not, by any means, all that is necessary to make this revolution; the process of learning is enormously complex and the personality of a society is a product of the whole of its experience. But surely these two objects, education and medical care, are among the most relevant to the improvement of the quality of men as producers of goods and services of all the objects within the capacity of Government to achieve.³⁶

It is of some significance, however, that these spending decisions of the Insular Government, which were consistent with a strategy of growth, did not do great violence to individual preference schedules.

Mention has already been made of the taste for education on prestige-oriented criteria. Indeed, public expenditures for education do not, in a sense, compel its consumption; it is rather only permissive. The law does

³⁶ It is necessary, of course, to observe the quality of education, as well as its quantity. If the content of instruction were such as to re-enforce past practice and to cause them to accept it on faith, rather than to inculcate a spirit of skepticism and a willingness to change when it were fruitful to do so, then, judged on economic criteria, perhaps more schooling would be worse than less.

require attendance at school by children, but the number of school seats is less than the number of applicants in all but the uncommon cases, and truants are not troubled. Still taxes are paid, attend or not, and their incidence is heaviest upon upper-income earners who do not use the public schools at all, but buy educational services for their children from the private schools.

Medical care is also highly prized. The incidence of illness has always been high among Puerto Ricans and people are preoccupied with keeping themselves well. If the resources of the family do not permit the purchase of a physician's services and free medical services are not available, the Puerto Rican will have recourse to pharmacists who dispense diagnostic services and he will consume patent medicines in quantity. Or, if he is a town slum dweller or a rural person, he may consult a practitioner of folk medicine who will do what he can to drive off the spirits who bring disaster.

THE STABILITY OF THE TASTE FOR GAMBLING

One brief concluding comment ought to be made about a facet of consumption that appears unaffected by economic and social change. The Puerto Rican has a penchant for taking a gamble. He seems to have had it for a long time. Flinter noted in the early nineteenth century that "the young Creoles . . . are passionately addicted to games of chance."³⁷ Commissioner Carroll saw it in 1899: "[Carnival] was a time for games of chance. The market place and drinking houses were occupied with tables for all kinds of gambling,

³⁷ *Op. cit.*, p. 75.

which is a passion with the people. Boys and girls, men and women, who had saved up their centavos and small silver coins for this purpose, crowded around the tables afternoon and evening and took their chances. Although this was contrary to law the municipal authorities said the custom was dear to the people."³⁸ Weyl said, shortly after the turn of the century, "so widespread is the spirit of gambling that it may almost be said to take the place which in other countries is taken by Saving."³⁹ The universality with which tickets are bought in the legal lottery or, especially by the poor, in the illegal "bolita" numbers games and the passion with which wagers are negotiated and contracted at cockfights are testaments to the fact that this is one thing that has not changed by the mid-twentieth century.

Where gambling is a common phenomenon, so is windfall income earning. Since it is reasonable to assume that windfall income, especially when it is large, relative to permanent and periodically received income, is spent on different objects from the permanent component itself, aggregate spending patterns must be significantly affected by the Islanders' propensity to gamble.⁴⁰

SUMMARY

Puerto Rico has experienced very substantial change, especially in the last half century.

³⁸ *Op. cit.*, p. 36.

³⁹ *Op. cit.*, p. 776.

⁴⁰ Unfortunately, little is known, and therefore can be said, about the uses to which winnings are put. Maccoby and Fielder asked their upper-income families "Suppose you won one of the \$1000 lottery prizes, what do you think you would do with it?" but this is a bad substitute for *ex post* observation of behavior.

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This change has been most importantly characterized by rising per capita income; relative progress in the growth of the sugar coasts and the urban centers; an increase in the propensity to move and a fall in the cost of movement; rising population size and density; institutionalization of consumption decision-making; the liberation of women; and increased mobility among classes.

These changes are components of a whole and integrated process of economic growth. They have affected and are affected by consumption choices.

Traditionally, Puerto Rican society has been stratified and rigid. Movement among classes, in either direction, has been inhibited because the roads to rising socially have been narrow and few. Recently these roads have increased in number and the flow along them has become less viscous. The old rigidity and the new flexibility have both combined to make Puerto Ricans sharply and explicitly aware of social ranking and of changes in rank.

Consumption choices are profoundly affected by the desire to rise. Goods and services have become symbols of status. The possession of particular objects of expenditure have the capacity to raise a family a rung on the social ladder. Income is spent along lines that will cause a family to rise or will prevent its falling. The desire for status is so strongly felt in the poor countries, of which the Puerto Rico case is an example, that to understand patterns of consumption and expenditures it is necessary to examine closely those standards of the community that set the behavior appropriate to different statuses in society. This is more important in the poor countries than for more well-to-do communities, where leveling influences have been at

work for a long time and social flexibility has been long experienced. It is of some interest that the objects of expenditure to which prestige attaches seem almost always to fill a useful functional need.

The desire for status also causes the aggregate of aspirations for goods and services to be high. As a result total consumption does not lag behind income but tends to lead it; dissaving is common and debts are incurred in relatively large volume for acquiring durable goods.

High aspirations stimulate work and, therefore, they seem to have a net favorable effect on the economy, but sometimes they are also depressive, because they inspire the use of resources for the consumption of luxury goods that might otherwise have been productively invested.

The relative growth of the coastal areas and the towns of Puerto Rico, which are part of the process of economic progress in the island, have affected consumption patterns. Preference schedules in the cities are different from those in the country areas, and with given preferences, price structures are also different in the two places.

Children are important consumption goods in Puerto Rico and the inhabitants of the island seem to have a strong "taste" for them. While this is not the whole story, this preference is a large part of the explanation for the high birth rate in the island.

Government now takes a larger part of income than it once did. Public consumption choices are not the same as private and therefore, the structure of consumption has been affected by the diminished power of private households to spend their income in ways that are

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consistent with their own schedules of preferences and by the transfer of the decision-making function to public institutions which operate on other criteria. A larger part of resources is devoted to education and health than would likely be true, if this transfer

had not occurred. This has tended to improve the quality of the island's people. The quality improvement of human resources is strategic to growth and the capture of more income by the state has induced economic progress in Puerto Rico.

COMMENTS ON TAX AND ROTTENBERG PAPERS

William H. Nicholls

I was very much pleased that both speakers Tax and Rottenberg emphasized the importance of *alternatives* in their discussions. I should like to bring their comments somewhat closer to home.

With reference to low-income rural areas in the underdeveloped Southern United States, the statement is often made that such people prefer leisure or, in terms of the popular cliché, that "they like to hunt and fish anyway." In my opinion, such a conclusion simply is not so for whole communities and encourages an attitude that nothing need be done to attempt to improve their economic status. Time and again, when national manufacturers have been considering plant locations in the rural South, they have found that (even if they anticipate employing perhaps one thousand or more) ten to fifteen times as many local people are eager for nonfarm employment as the number of jobs in prospect. This constantly repeated eagerness for local nonfarm employment indicates that low-income farm people in the rural South are happy to give up much of their leisure time

when a satisfactory *alternative* is opened up to them.

To be sure, the alternative of migrating long distances to better nonfarm employment exists and millions of Southern rural people have availed themselves of this alternative. However, because people love home wherever it is, many will not make this drastic change in their way of life and yet would eagerly accept an alternative offered to them at the local level. For this reason, it seems to me that, by itself, outmigration will never be a sufficient corrective of the problems of low-income rural areas and that, insofar as it is feasible, industrialization of rural areas is therefore highly desirable.

Another important aspect of this matter of alternatives is on the consumption side. In the typical Southern rural community, the range of available consumer goods is astonishingly small. Even a local millionaire could live little better than most of his low-income neighbors on the basis of the goods and services locally available to him. All this is important in that local economic motivation is killed by the lack of stim-

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ulation of wants. Lacking a broad range of choice in consumer goods and lacking local competition in family levels of living, low-income rural people have relatively simple and static wants. But wants are dynamic and can be quickly changed, given increasing local purchasing power and increased alternatives in ways of spending money. Again, local

industrial-urban development appears to be the most effective way of bringing such economic change about.

Having said so much, I should like to ask Professor Tax whether the Indians of Guatemala have been offered such alternative forms of employment and, where they have, how they have reacted to these new alternatives.

DISCUSSION OF TAX AND ROTTENBERG PAPERS

Cora Du Bois

Let us begin by making explicit an assumption that dominates contemporary western economic thought; namely, economies (if not people and societies) can be ranged along a scale from those poor in the number and variety of consumer goods per capita, and therefore least like our own, to those rich in the number and variety of consumer goods per capita, and therefore most like our own. It is further assumed that a large number of, and multiple choices in, consumer goods represents a high, and therefore desirable, level of living. It is necessary that we clearly realize the value judgment that underlies such views and the ethnocentricity of such a system of ordering the multiplicity of economic structures that man has invented. When we discuss "economic development" and "consumption" we have placed ourselves within arbitrary boundaries.

Turning now to the two papers before us, one point emerges clearly from both, namely that a change-over to Euro-American consumption patterns is often associated with profound changes in the whole social organization and value

structure of a people. Professor Rottenberg's paper on Puerto Ricans represents one case where the change-over has moved both rapidly and far. Professor Tax's comments on Guatemalan Indians is a case study in resistance to such changes. A whole field of research lies in trying to discover the major determinants for both degree and rates of change produced in a society by alterations in consumer demands. That the expansion of consumer demands may trigger profound changes in the whole structure of social life should not astonish anyone who has observed the American scene over the last half century. We have seen dramatic increase in our per capita consumption. Not only have economic institutions changed with increases in consumption, but there have been profound alterations in the social structure and values of our national life, as well as in the habits of our people. Unfortunately we do not know very much about the chain of antecedents and consequences in changing consumer patterns. In what situation is writing advertising copy effective, is the mobile truck effective, is the Chinese or Bengali

peddler effective in developing consumer demands that we assume will then lead to money economies, and then to technological improvements that facilitate greater per capita production; that are, in turn, essential to those capital formations necessary for economic development?

Compared to other social disciplines, economics has had a distinguished record of prediction. But such predictions are culture-bound. They are most accurate for societies in which the Western economic system already operates. When they are extended beyond the sphere of Euro-American cultural determinants, predictions must rest on that escape clause, "all other things being equal." All other things, of course, are rarely equal, particularly in societies that have neither produced our economic system nor have developed the series of institutions, values, and personal habits required to support such an economic philosophy. Here Rottenberg's and Tax's papers form a nice apposition. Professor Tax presents, in the Indian half of his paper, a resistive society. Professor Rottenberg presents a society ready for analysis in Western European terms.

Rottenberg's paper stresses that economic development does not occur in a vacuum. It is associated with changes in other areas of the culture. At present we have only a very few and rather vague notions about the nature of the relationships between what we analyze out as economics and those other institutions, feelings, and values that human beings have devised to solve the problems of gregarious living.

Here is a field of major importance to economists, since it affects both the precision and the universality of their

predictions. It is also a field in which anthropologists, sociologists, and social psychologists may collaborate with economists. It is precisely here that Mr. Rottenberg's analysis of consumption in Puerto Rico, set as it is in the context of broader social factors, should contribute to the accuracy of predictions an economist might risk for that country. We can place more faith in an economic prediction that considers some of the issues Professor Rottenberg raises than a prediction that does not.

Turning now to Professor Tax's paper, consideration has been given to social factors dictating not only the rate but also the direction of economic acculturation. He suggests that two social systems, and therefore two economic adaptations, can exist side by side symbiotically. This point, the so-called dual economy, has been discussed at length for other areas of the world, notably by the Dutch economist Boeke¹ in relation to the system of Dutch colonial entrepreneurship and the Javanese subsistence economy of prewar Indonesia.

There are probably many cases of dual, or even plural, economies, i.e., two or more viable economic systems that exist side by side with greater or lesser degrees of interaction.

Such situations have, of course, singular flexibility. This was demonstrated during the depression in Indonesia. When the complexly geared machinery of western European economy collapsed in the late 1920's, the Indonesians were able to retreat from Dutch enterprises and Europeanized cities to their subsistence villages and there weather the storm. The Europeans and their im-

¹ J. H. Boeke, *The Structure of Netherlands Indian Economy* (New York: Institute of Pacific Relations, 1942).

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ported mine and plantation labor, Chinese and Indians, were far more vulnerable: the Chinese and Indians because they had no line of retreat; the Dutch not only because there was no line of retreat, but also because their consumption standards were both too high and too specialized to be flexible. Contrariwise, when Javanese rice crops failed, the European economy and technology were able to make up the deficits and stave off famines in the subsistence economy.

This suggests that there may be some virtue in preserving plural economies that are in symbiotic equilibrium until such time as we can be sure that the complex and elaborate mechanism of Western European economy is sufficiently perfected to run no risks of breakdown, either for purely economic reasons (if such there be) or for extraneous reasons, such as certain types of war.

Such a suggestion will be immediately damned as sentimental or conservative, or even downright reactionary. But more important than any such labels, it also strikes me as utterly improbable. Improbable, because the expansive energy of the Euro-American economy has far from spent itself. On the contrary, it has been given a new lease on life. First, because technology is snowballing at an unprecedented rate in world history. And second, because the Western-educated elite of countries whose technical and economic equipment is less elaborate than our own have been won over to the desirability of our level of living.

It is these elites that are today most determined to institute among their peoples one or another subspecies of European socioeconomic life. To the

degree that they are successful in persuading their peoples, subsistence economics will disappear and the economic alternatives of vast numbers of peoples will have been diminished.

A case in point is certain portions of the rice economy of Thailand. The farmer produces rice for his maintenance. He sells rice for prices that suffice only to meet his taste for foreign articles of commerce, such as cloth, mirrors, bicycles, flashlights, or whatever he has come to consider either a desirable luxury or a symbol of status. His surpluses go on the national market when harvests are in, the market is glutted, and prices are lowest. Into the producer's reckoning labor costs do not enter. He lives in a world of labor for subsistence and not wages. Even though he may be accustomed to use currency, he has not yet learned to set money values on his time, his sweat, and his leisure. He does not see his work, lands, or tools as a capital investment on which he should receive interest. His surpluses get into the national or the world markets at prices well below anything that would be considered an "economic" return by our standards. As Dobby has said, "The full costs of producing rice were concealed from the market by the subsistence system."²

It seems highly improbable that this condition will last in the face of national and international developmental plans with their associated welfare and education programs. The agricultural producer is being taught to reckon his production in money terms. Yet the foreign

² E. H. G. Dobby, "Food and the Changing Function of Southeast Asia," in Philip W. Thayer, (ed.), *Southeast Asia in the Coming World* (Baltimore: Johns Hopkins Press, 1953), p. 130.

exchange that surpluses from an essentially subsistence type of economy provide, is the sinew of new national governments. Only too frequently this foreign exchange is plowed back into imported consumer goods that rarely reach the producer in a measure commensurable with his contribution, but instead provide *circum et panes* for the primate cities of the area. But this taste for more and more varied consumer goods must eventually be paid for in changed habits of work, altered patterns of family life, new attitudes in respect to citizenship, new burdens of taxes.

We have hardly envisaged the social revolutions that will develop from the accelerating diffusion of western economic patterns. We certainly have not yet provided a system of analysis that is sufficiently sophisticated to deal with such questions. Our economic analyses are still both methodologically and culturally circumscribed. While they are, I hope that we shall compensate for such limitations by a proportionate tolerance for social and political improvisations required by an adoption of our inadequately analyzed and understood economy.

FURTHER DISCUSSION OF TAX AND ROTTENBERG PAPERS

Elizabeth E. Hoyt

My discussion falls into three parts. First, what do we need as a framework for approaching an understanding of the consumption of underdeveloped countries in process of change? Second, a few words on the contrast between Puerto Rico and Guatemala as examples of underdeveloped countries. Third, some comments on three specific issues raised by these papers.

THE FRAMEWORK

The framework includes the facts of consumption, the reasons for the facts, and, where policies have been devised to achieve certain ends, a critique of them in action. Through the successes or failures of such policies light may be cast on features of the social economy which were inadequately appreciated before.

INCOME

There must be on hand the measurable data of income and the use of income, money and real, for any one

region at two or more periods. As yet we do not have for any underdeveloped country for any one period satisfactory figures of income, still less of relation of saving and spending, still less of use of income by aggregates; and very few estimates of uses of time. The work on income, including real income, in colonial areas by Phyllis Deane for the British National Institute of Economic and Social Research is only a start in this direction. We do have, in some areas, family expenditure studies of groups of limited size. These help us by pointing out the more striking facts of expenditure for particular groups but most of them are imperfect in detail and I fully agree with Miss Williams' paper that they are disappointing for comparative purposes.

The measurable data of income must be shown not simply as separate facts, but as a related whole, since change in one aspect of the standard may either strengthen or upset another. Also, the data must be related as far as possible to their many causes. At one extreme, for example, is the geography of the

country, at the other extreme is the value system of the people, and there are many influences between them. The nature of the causes of course casts light on readiness and resistance to change.

AGENCY OF CHANGE FROM WITHOUT

We need to know the chief types of human instruments through which change is introduced from without, such as government officials, business enterprisers and missionaries, and the chief agencies and institutions they use in introducing change. Of these institutions I wish especially to stress markets, to which I shall refer later.

AGENCY OF CHANGE FROM WITHIN

Who are the initiators of change (or of resistance to change) from within: indigeneous leaders and the aspects of change that they are most likely to emphasize? Not only are indigeneous leaders often a major influence in change, or in resisting change, but contributions to them or their work may be very important in the people's expenditures directly. To give an example, I was in Kenya among the Kikuyu in the Mau Mau country shortly before the rebellion broke out. At the time I was there a tremendous movement was going on for sponsoring education, especially education under native leadership. People were literally pushing stones up hills to erect schools on every summit, and it was reported that some families were giving half their money income for the education of their children and their contribution to school building. Certain aspects of change as introduced by Europeans were resisted, others were pushed forward with major

speed. The people were trying consciously to guide the development of their own standard of living. Separatist or independent schools and churches are very important agencies of change and resistance to change in some areas; their religious significance has been studied but little is known of their political and economic significance.

MOTIVATION AND ORDER OF CHANGE OF WANTS

Motivation is, of course, a physiological factor, and by it both diversity in change and similarity may be explained. In spite of great contrasts in the appearance of wants at different times and in different places, there are indications that some types of wants tend to develop among underdeveloped peoples in a certain order. In other words, behind the diversity are some laws common to all.¹

TENSIONS

What are the tensions accompanying change and effects of tensions both on demand for specific goods and services and on the integration of the entire standard of living. Such tensions are of course related to points previously mentioned, and the area of study is an immense one. One of the best single volumes is a UNESCO publication, *Cultural Patterns and Technical Change*, Margaret Mead, editor, Paris, 1953.

POLICIES

What are the policies already developed to deal with change and its

¹ E. E. Hoyt, "Want Development in Undeveloped Areas," *Journal of Political Economy*, LIX, 3 (June, 1951), 194-202.

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problems and what has been the actual result of such policies? In a field in which we know so little, the experience of a policy often brings out elements in a situation which were not recognized until the policy was put into effect.

PUERTO RICO AND GUATEMALA AS EXAMPLES OF UNDERDEVELOPED COUNTRIES

While Puerto Rico and Guatemala are underdeveloped countries with certain important characteristics in common, I am sure that you will feel that points of difference rather than points of similarity are most evident from these papers. The treatment of the two papers is of course very different, but Puerto Rico and Guatemala are themselves very different, and the processes of change and influences on change, or the lack of change, are in many respects very dissimilar in the two countries. For the purpose of this session this is an advantage, for these outstanding differences put us on our guard against making hasty generalizations. I should like to throw still further into relief some of these differences, for the sake of emphasizing the immense variety of conditions that must be recognized before anyone can safely generalize to any considerable extent about consumption in underdeveloped countries.

The chief contrasts are these. First, in Puerto Rico we are dealing with people of a relatively homogeneous birth and culture ready to move in the same direction; in Guatemala we have two groups widely apart. As Professor Tax shows, the value system of the Indians of Guatemala is not necessarily less rich than that of the Ladinos, but it is

very different, and there is not much of a bridge joining the two cultures. The other great contrast is that the Indians of Guatemala still live relatively isolated in the mountains of a poor country which has done little to change them, whereas Puerto Rico comes under United States administration and there is much communication between Puerto Rico and the mainland. We have made great efforts and expended huge sums to raise standards of living in Puerto Rico. Further, these standards of Puerto Ricans from the beginning, however different from ours, are less different from ours than the standards of the Indians of Guatemala. The Puerto Rican standards have always been a part of the broad European complex from which our own also are derived.

Professor Rottenberg's account of change in Puerto Rico is a cautious and modest one, and Puerto Rico still seems very backward in comparison with the United States. But by another comparison, that of Puerto Rico with other underdeveloped countries, Puerto Rico shows an amazing rate of change in a short period. Tugwell, the former Governor of Puerto Rico, published *The Stricken Land* in 1946, a dreary account of conflict and destitution; but in 1953 he wrote in the January issue of the *Annals of the American Academy* that though, when Americans came into Puerto Rico, the children were "dying like flies" and education was available only for a few, now the transformation in process is nothing short of a miracle; it will be for a long time "one of the wonders of human history." The United States has poured out great sums in Puerto Rico but even more than that the aim of development of "education, vocational training and agriculture has

been on a basis of equality with the states."² Colonial powers and the independent governments of underdeveloped areas are too poor to press development policies with such speed. Granting that much poverty and ignorance remain in Puerto Rico, that our development policies have often been unwise and their effects grave and that Tugwell's language is overly dramatic, the fact remains that to my knowledge such claims of rapid development have never been made for other underdeveloped regions either under their own independent governments or under colonial administration.

COMMENTS ON THREE SPECIAL POINTS

All three of these points are of major importance in economics, though for understanding the third other social sciences are more than usually essential.

SAVING AND SPENDING

Professor Rottenberg points out that there is a tendency in Puerto Rico for spending to exceed saving, and there is a good deal of statistical evidence to support his statement, at least for particular groups. Professor Tax, on the other hand, indicates that his people are savers, both to take care of future emergencies and to buy land; though we do not know a great deal about this.

Granting that we need to define saving, and that we have far from adequate data on saving in relation to spending

² "Puerto Rico, a Study in Democratic Development," *Annals*, January, 1953, attempts to explain the significance for the world at large of "the remarkable doings of the last twelve years."

in either Puerto Rico or Guatemala, the available evidence points one way in Puerto Rico and in Indian Guatemala another. This apparent difference is my text, as it were, for bringing out extreme contrasts in attitudes toward spending and saving in various underdeveloped countries. Whatever normal saving and spending is, I shall give four situations which from our point of view would be considered abnormal.

In some underdeveloped societies, especially during their first contacts with industrial civilization, people have certain "targets" for which they will work, and they save until these targets are secured. Common targets are clothing and bicycles. I noted in East Africa that the education of children was also often a target. When the people have hit their targets they fall back into their original patterns, neither spending nor saving being changed, at least not for some time. This cannot happen when they are permanently employed as wage earners, but it does happen when they have the choice of being employed a portion of the year.

A second situation exists when wage earners save with the clear and definite object of getting away from their wage-earning situation, either by providing from their savings for the necessities of life somewhere else or by putting by enough to start a business for themselves. As in the first case, they regard wage-earning as a temporary phase of their lives, though in the second case it is generally a longer or at least a more continuous phase than in the first.

In the third situation the people go berserk in spending and often fall into debt. This case is, of course, related to the existence of tensions that I have already mentioned as a part of the

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framework for understanding consumption in underdeveloped countries. People uprooted and upset by new conditions of life may find spending an escape, especially spending for conspicuous consumption and for sensory pleasures that yield an immediate satisfaction. Even though they may have many more economic resources than ever before, these resources may not be enough, and debt is the result.

The second situation, saving to get away, and the third situation, excessive spending on ephemeral objects, may exist in the same place at the same time. I found evidence of this at Tiquisate, the headquarters of the United Fruit Company on the west coast of Guatemala. My investigations were rather short, for the Company did not welcome investigation. But I met some people who were saving as fast as they could save with definite plans of starting small economic enterprises themselves. The spending on ephemeral objects at Tiquisate was, however, even more obvious. A satellite town largely devoted to serving these objects had grown up on the outskirts of Tiquisate, with many bars, honky-tonks, and houses of prostitution. In this case the purveyors of ephemeral satisfaction had moved in by the hundred to take advantage of workers' lack of adjustment, and to increase it.

A fourth situation is quite different. In the cases where I know of it the people are peasant proprietors rather than wage earners, and a striking example is to be found in the Gezira Scheme in the Sudan. The long-term planning for production and welfare of this experiment is of a very high grade, and the planners were very much surprised when they found that the peasant

proprietors were in some cases neither saving their unusually high incomes nor spending them for consumers' goods: instead they were hiring others to do their work for them. The Gezira is on the main route between West Africa and Mecca, and Moslems stopped off either before or after they had made the pilgrimage and hired themselves out to the prosperous peasants, who were then able to sit back and watch the labors of others.

I have given four examples of relations of spending and saving out of my own observations which may seem extreme, but the fact is that there appears to be something from our point of view extreme or "abnormal" in every situation of changing consumption among underdeveloped peoples. One would expect similarities among groups in the same outward situation, but, as in the case of Tiquisate, there may be outstanding differences in the same group. Though I am willing to regard all my cases as abnormal, I believe that what we would call normal in our own situation would be so regarded mainly because we are familiar with it, and our own situation may change at any time with a change of economic, social, and political conditions. Naturally, we think that the variety of these conditions possible among us is not so great as the variety to be found in underdeveloped countries, but the variety possible among us is very great nonetheless, and this fact should put us on our guard against simple theories of the relation of saving and spending.

MARKETS

Although Professor Rottenberg does not mention the development of mar-

kets in Puerto Rico he tells us by implication that they offer a variety of goods and services pleasing to the people, as otherwise they would not buy them. Professor Tax says that the consumption of the the Indians in Guatemala does not appear to have changed much since the first generation after the sixteenth-century conquest. And yet markets are an extremely picturesque feature of Guatemalan Indian life. Nowhere in the world among underdeveloped peoples are markets a more conspicuous part of the economy than in Guatemala, and it is probable that nowhere in the world do people travel regularly such long distances on foot in order to buy and sell at markets. Visitors to Guatemala almost always comment on the number and color of the Indian markets; and yet the markets offer little to change the basic consumption of the Indians. The fact is, we know very little about the influence of markets in changing the consumption of underdeveloped peoples, and are likely to jump to conclusions that markets tend to keep up with increases in income and even encourage effort for such increases through the variety of goods they present. Especially do we think this if we see any markets that from our point of view are picturesque. In my experience in underdeveloped countries, however, it seems clear that no particular attention has been paid by anybody to providing a wide range of goods and services to fit in with interests already present among the people. Marketing is usually left to the chance activity of traders, most often small traders, who are slow to take advantages of their opportunities and who themselves lack knowledge of the alternatives they might present to their potential customers. When, as is the

case of Guatemala, a relatively small range of inexpensive consumers' goods is manufactured in the country and there are high tariffs on the importation of such goods, the development of new interests is slowed down still more.

One of the most fruitful problems that anyone could investigate in connection with changes in consumption of underdeveloped peoples is the types of markets available to them and the range of goods and services available for them to buy. In discussing changes of consumption in our own economy we usually assume the existence of a wide range of availability of goods and services, and it is hard to think of any consumers' goods within the price range possible to us that some producer has not made and some seller called to our attention. The situation is not at all the same in underdeveloped countries.

CULTURAL CHANGE BY SMALL DEGREES AND CULTURAL CHANGE BY MUTATION

Professor Tax makes clear that when Guatemalan Indians change to Ladinos they change almost at once; they do not become Ladinos by small degrees. In many underdeveloped societies an early change is in articles of clothing such as shoes, followed by other small changes. In Guatemala, however, "if an Indian becomes financially able to wear shoes he will not do so. . . . Generally speaking a change of identification is required before such changes in consumption occur." The change in consumption pattern takes place *after* the major shift in group identification is already accomplished. "In a deeply cross-cultural situation a change in social identification means crossing a chasm that is deep and wide; the Indian who becomes

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a Ladino is transformed into quite a different person, in way of thought as well as way of life." Before an Indian changes his consumption pattern he "becomes Ladinoized first, and by circumstances not related [at least not directly, I may insert] to will or ability to pay. Then he (and more so his children) having already changed their identities (so to speak), can and will adopt the accompanying symbols. It is only then that financial ability to support the symbols becomes relevant. But then we are no longer talking about Indians, but about economic differences among Ladinos."

I have quoted Professor Tax at some length because this is so different from what is usually assumed in cultural change. It is usually taken for granted, at least by people familiar only with our own society, that new consumption goods and services are introduced by degrees, bit by bit, as in our society they so often are. The words to be highlighted in Professor Tax's paper are the words "in a deeply cross-cultural situation." And I know that the situation he describes, which may be called a cultural mutation, occurs in cases other than Guatemala. I once had it described to me by a Chinese of the old regime: should he and his friends accept the new world culture with its accompanying consumption symbols, or should they not? It was a moral decision, taken once for all and often with agony, for once taken they had reached the point of no return. To be sure, particular consumption goods might, after that, be accepted slowly, as some are among ourselves, but, when the cultural leap had once been made, it assured that adoption of the major consumption symbols of the new life would inevitably follow.

In Puerto Rico, in contrast with Guatemala, we have a relatively homogeneous society so far as its broad cultural base is concerned, and the changes, though major in sum, have been more of the nature of crossing many small streams than of leaping a chasm to land in an utterly different country. Borrowing biological terminology we may call the latter cultural mutation, and, as in biology, I suspect we do not know the relative importance of mutation and change by small degrees; it depends in part, of course, on a more explicit definition of mutation. I think we have in the situation which Professor Tax describes, with the causes which make it logical and necessary, a phenomenon that goes far to explain a good deal of the torments of cultural transition found in so many places of the world. In other words, the understanding of consumption change leads us into new areas and puts us in touch with deep currents, for at times the most fundamental of human values are involved in it.

The idea I should like most to leave with you is that of the immense complexity of consumption in underdeveloped countries; complexity of original conditions and values, complexity of conditions of change, and complexity of reactions to change. Some of these complexities become less with the progress of industrialization, but others arise (the determination of leaders of the Kikuyu tribe to set up their own modern educational system and to guide standards of living is a case in point). These complexities put us on our guard against generalizations as to change and also as to the difficulties of formulating laws of choice even among ourselves; but the search for them must go on.

INTERNATIONAL COMPARISONS OF PATTERNS OF FAMILY CONSUMPTION

Faith Williams

This paper discusses how consumer expenditure patterns can be compared among countries. Before we can expect very much more progress in this field, I believe that we need to achieve more comparability in the collection, summarization, and analysis of the data on the subject.

It is generally agreed that international comparisons of average consumption patterns that do not take account of differences in income level and distribution, and in occupational distribution, may be very misleading. Apparently it is not so well recognized that we need surveys which will provide information on the outlays of families of different size (or type) and age level, by income in the various occupational or cultural groups. Differences among countries in the age and family size structure of populations are very great, and these differences are intimately related to variations in consumer expenditure patterns. Quite erroneous conclusions may be drawn from over-all averages even when classified by income, when it is impossible to analyze

the patterns of different population groups.

Further, we need to sharpen the tools we have used for international comparisons of consumer expenditures, and to make more use of measures of income elasticity in relation to the levels and distribution of consumer expenditures.¹

The attached bibliography of sample studies of consumer expenditures in the postwar period brings together in compact form some information about coverage and over-all methods of summarization. Time was not available to summarize methods of choosing samples, or of obtaining and classifying the data. Judging from the studies I know in detail, I believe that if this information had been added, it would have increased the impression of noncomparability that already stands out from the brief analyses provided.

The May, 1955 *UN Monthly Bulletin of Statistics* includes data on aggregate

¹ See S. J. Prais and H. S. Houthakker, *The Analysis of Family Budgets* (Cambridge: Cambridge University Press, 1955).

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gate private consumption expenditures for eleven countries for 1933, and each of the six years from 1943 through 1953. We have located 175 sample studies of consumption expenditures made in the post war period in fifty-six countries. In only five countries—Germany, Korea, Japan, The Netherlands, and Switzerland—have the expenditures of comparable groups been surveyed annually. International comparisons of patterns of family consumption for different income, occupation, and family-type groups present quite different problems from such comparisons of data on aggregate consumption expenditures.

The difficulties of drawing conclusions as to international differences in consumption levels from sample studies of consumption patterns is highlighted by the fact that no use was made of such studies in the very valuable UN report on the world social situation in 1952.

INTERNATIONAL COMPARISONS OF CONSUMER EXPENDITURES IN THE PAST

Obviously, most studies of consumption patterns are undertaken primarily for use in the areas where they are made. Techniques used in gathering consumer expenditure data will be selected primarily because they are regarded as most successful in producing figures required in making public or private domestic decisions, and only secondarily because they will produce internationally comparable figures. There have been, however, studies of consumer income and expenditures undertaken primarily because international comparisons were desired.

The case studies conducted by Frederic LePlay and his group were made for the purpose of comparing family economics and social adjustment in industrializing and in stable agricultural societies.² Later investigators have not shared LePlay's faith in the ability of clergy, teachers, and other community leaders to select one family as representative of a total socioeconomic situation. It must be granted, however, that he and his followers have provided us with material on the life of workers in the first half of the nineteenth century without which social and economic history would be much poorer.

The first extensive statistical survey of the economic situation of wage earners' families in the United States was undertaken in relation to a tariff controversy. The Democratic majority in the House in July, 1888 passed a bill putting raw wool, hemp, flax, and lumber on the free list, and reducing tariffs on pig iron, wool, cotton textiles, and some other manufactures.³ The Congress on June 13 passed an act converting the Bureau of Labor, established in the Interior Department in 1884, into an independent agency and instructing the Commissioner of Labor:

. . . to ascertain, at as early a date as possible, and whenever industrial changes shall make it essential, the cost of producing articles, at the time dutiable in the United States, in leading countries where such articles are produced, by fully specified units of production, and under a classification showing the different elements of cost, or approximate cost, of such articles of

² Frederic LePlay, *Les Ouvriers Européens*, 2nd ed. (Paris, 1878).

³ F. W. Taussig, *The Tariff History of the United States*, 5th ed. (New York: G. P. Putnam's Sons, 1910), pp. 253 ff.

production, including the wages paid in such industries per day, week, month, or year, or by the piece, and hours employed per day; and the profits of the manufacturers and producers of such articles; and the comparative cost of living, and the kind of living.

The high tariff forces won in the 1888 Presidential and Congressional campaigns, and the next Congress saw the enactment of the so-called McKinley Tariff. Nevertheless, Carroll D. Wright, the Commissioner of Labor, went ahead with his studies of comparative costs of production, including the "cost of living" of workers in the iron, steel, coal, textile, and glass industries in the United States, Belgium, France, Germany, Great Britain, and Switzerland. The published reports presented data on sources of income, expenditures for major categories of goods and services, and for twenty different kinds of foods, and a sentence on housing and house-furnishings for each of some five thousand families. Summary data on income and expenditures are presented for all families covered and for 2562 American and 703 European "normal families" by number of children and by income level, (the foreign currencies having been translated into United States dollars, apparently by means of the foreign exchange rate). The Commissioner stated that "by a normal family is meant one with the following attributes:

It has no boarders or dependents.
It does not own its dwelling place.
It has an expenditure given for rent, fuel, light, clothing, and food.
It has both a husband and a wife."⁴

⁴ US Bureau of Labor, *Seventh Annual Report of the Commissioner of Labor*, 1891, vol. II, pt. III, "Cost of Living," (Washington, DC: Government Printing Office, 1892), p. 857.

The exclusion of homeowners from "normalcy" presumably eliminated some of the more prosperous of the otherwise "normal" from the tabulations. Since information on home ownership is given in the listing of individual families, it would be possible to calculate the bias introduced by this procedure in each country covered. The information on average size of family provided in the summary tabulations makes clear that there were more four- and five-children families at the higher income levels, and that family size in the "normal" group was larger among the European than among the American families.

The British Board of Trade study of 1904-1909, covering from three thousand to almost eight thousand families in Great Britain, Belgium, France, Germany, and the United States was inspired by debates on the effect of protective tariffs on foreign trade and industrial conditions generally. The methods used were apparently influenced by the conclusions of the Board's analysis in 1903 of studies of wage earner incomes and expenditures made in Great Britain and other countries. This analysis concluded: "These differences of wants and tastes are such that the comparative welfare of the working classes in various countries in the broadest sense of the terms cannot be determined by any statistical method."⁵

The Board's five-year project obtained from employers and from wage earners, data on hours and wages for certain occupations, retail food prices, rents, size and type of wage earners' housing, and data on family income, composition, food expenditures, and food consumption. In comparing the

⁵ Great Britain Board of Trade, *British and Foreign Trade and Industry*, Cd. 1761, 1903, p. 229.

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United States and the United Kingdom, figures are given by family-income class for average weekly family income, number of children living at home, average amount and percentage of income spent on food (excluding wine, beer, and spirits), and per capita quantities of eight groups of food stuffs purchased by families:

- a. In which the total family income is approximately similar;
- b. In which the total amount spent on food is approximately similar;
- c. In which the total amount spent on food is approximately similar, allowance being made for the percentage difference in retail prices as between the United States and the United Kingdom.

The Board sums up the results of the study in the following paragraph:

. . . the money earnings of the workman in the United States are rather more than 2½ times as great as in England and Wales, and, since there is no proof that employment is more intermittent in the United States than in this country, a much greater margin is available, even when allowance has been made for the increased expenditure on food and rent. . . . The margin is clearly large, making possible a command of the necessities and conveniences and minor luxuries of life that is both normally and really greater than that enjoyed by the corresponding class in this country, although the effective margin is itself, in practice, curtailed by a scale of expenditure to some extent necessarily and to some extent voluntarily adopted in accordance with a different and a higher standard of material comfort.⁶

As far as I have been able to discover,

⁶ Great Britain, Report on an Enquiry by the Board of Trade, *Cost of Living in American Towns* (London, 1911), pp. lxxv-lxxvi, 55.

since 1909 no cross-section studies of consumer expenditures as such have been made for the purposes of international comparison.

CURRENT NEEDS FOR INTERNATIONAL COMPARISONS OF CONSUMPTION PATTERNS

Questions that can be answered by consumer expenditure surveys are similar on the national and international levels. National interest in the effect of children's allowances, aid to the aged, a minimum wage, or an agricultural program becomes at the international level interest in the relative effect on levels of living of measures taken in different countries to improve the situation of large families with low incomes, of superannuated workers, or in agriculture. Expenditure data from consumption surveys are used at national and local levels to provide weights for consumer price indexes, and to develop family budgets. At the international level such data may be used to derive budgets of goods and services providing equivalent satisfactions in different climatic and cultural settings. Consumer surveys are used by market analysts to predict trends in consumer buying for the use of domestic producers, and distributors of consumers' goods. At the international level they provide data on factors affecting changes in consumer buying of foreign versus domestic goods, and particularly on the effect of changes in tariffs and in prices on quantities of goods purchased.

Certain students of the organization and control of production and distribution (heirs of Frederic LePlay) are interested in using data on consumption levels in given economic groups in dif-

ferent countries as measures of the relative success or failure of different types of economic organization and control. Analyses of consumption levels of workers' families in countries with and without antimonopoly laws, with and without protective labor legislation, and with socialist, free enterprise, or mixed economies have been undertaken from time to time in the postwar period, in spite of the difficulties involved in obtaining comparable data from different areas.

In some groups there is an interest in studying levels and standards of living to obtain greater understanding of the means of providing incentives for the development of new skills, increased productivity, and greater regularity of work, and for the more effective utilization of available goods.

Sample surveys of consumer outlays have also been used to study the "propensity to consume" and the "propensity to save." Checks on underreporting of income and savings in such studies have shown the need for combining the sample data with information from other sources to provide better estimates than can be obtained from the sample surveys alone. Derivation of such estimates is costly and time-consuming, and I have not seen any recent international comparisons of such surveys from this point of view.

INTERNATIONAL COMPARISONS OF THE COST OF EQUIVALENT LEVELS OF LIVING

There have been a number of studies using the results of sample consumer surveys to provide weights for international price comparisons computed by the Fisher ideal-index number

method.⁷ However, relatively little use has been made of data on expenditures of families of different types at successive income levels in different areas for establishing the comparative cost of equivalent levels of living among these areas.

Research projects undertaken in this field have been handicapped by limitations as to time and staff. No project using sample consumer expenditure data as a basis for measuring international differences in the cost of equivalent levels of living has ever been published in detail.⁸ Such measures are needed for administrative decisions as well as for more erudite purposes. This type of comparison is discussed in a volume from the Conference on Income and Wealth and it is, therefore, unnecessary to pursue it further here.

TECHNIQUES OF COMPARING CONSUMER EXPENDITURES BY FAMILIES IN GIVEN OCCUPATIONAL GROUPS

For the most part, the analysts primarily interested in the percentage of total expenditure going to various types of goods and services have had to be content with averages by income level for different groups (as a rule groups of wage earners or wage earners and clerical workers), and have not been able to go behind the averages to explore the effect of differences between or among countries in the type and size

⁷ See especially *UN Statistical Papers* Series M, No. 14 (September 1952), and Series M, No. 14, Add. 1 (December 1953).

⁸ See D. S. Brady and A. Hurwitz, "Measuring Comparative Purchasing Power," in *Problems in the International Comparison of Economic Accounts* (Princeton: Princeton University Press, 1957).

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of families found at each income level. In the postwar period there has been an increase in the number of surveys that provide data classified by occupation and then by family type or family size within income levels. Of the 175 postwar surveys listed in the attached bibliography, fourteen give data on expenditures for major categories of goods and services by family type or family size within income levels, and the United States Bureau of Labor Statistics study of urban expenditures in 1950 will add one more when its tabulation is completed in mid-1956. The need for this sort of refinement was clearly implied by Carle Zimmerman's comparisons of percentage of expenditures going to food among families in different cultures.⁹ The figures he himself had collected in Siam and others from Europe, Asia, and Latin America showed that the percentage of expenditure going to food was in a number of cases *higher* at successive income levels at the lower end of the income scale. He suggests that the "law of food" should be stated as follows: "Once a group has reached the cheapest and lowest physical maintenance of food standards, increases in income are associated at first with rapidly increasing food expenditures, later with slowly increasing expenditures and finally with stable or decreasing expenditures." He points out that "many of these studies show an increasing size of family with increasing income. This naturally leads to a tendency of higher percentages expended for food. However, careful analysis of the studies just mentioned shows that increased size of family or household

accelerates but is not responsible for the totality of these deviations from Engel's law."

It must be recognized, however, that it is extremely difficult to analyze the effect of family size on expenditures at different income levels unless separate figures are made available within income groups by family size, or by family type as they were in the United States study of consumer purchases for the mid-1930's. In this study, the data by occupation and family type show that the percent of total expenditures going to food declines with increasing income. Using these data, Lorimer and Rohrback¹⁰ have shown that when differences in income distribution among family type groups are eliminated, the larger families consistently devote a larger proportion of their expenditures (or in the case of farm families, of value of family living) to food.

Similar results were obtained by the analysis of sample data from the 1937-1938 British study of wage and clerical workers' expenditures by family size. Data presented by J. A. Nicholson show that the percentage of total expenditure going to food at given income levels was from 6 to 11 percentage points higher for families with three children than for families with no children.¹¹

¹⁰ Frank Lorimer and Herbert Rohrback, "Economics of the Family Relative to Number of Children," *Milbank Memorial Fund Quarterly*, XVIII, no. 2 (April, 1940). They used samples for four family types from two Middle Western cities and one Middle Western farm group, combining the data by income level for each type with the distribution by income of families of all types in the random sample of families.

¹¹ J. A. Nicholson, "Variations in Working Class Family Expenditure," *Journal of the Royal Statistical Society*, Series A, pt. IV (1939), 359 ff.

⁹ Carle C. Zimmerman, *Consumption and Standards of Living* (New York: D. Van Nostrand Co., 1936), pp. 102 ff.

The data already available thus make clear the desirability of comparing consumption patterns among countries by means of data that show expenditures by family type within occupation and income group. In addition, we already have some information, at national levels, about the effect of the age of the chief earner on consumption patterns. When the data from the 1950 BLS study of consumer expenditures are tabulated by age of the chief earner, we shall know more about the extent to which this factor determines the distribution of consumer expenditures within income and family type groups.

In an analysis of household expenditure in France and England, T. Schulz has raised significant questions about the effect of cultural differences on the percentage of total outlay going to food and how they affect this figure as a measure of international differences in the well-being of given occupational groups. A comparison of the expenditures of British and French workers shows that "the French paid for food a higher price in terms of their incomes than the English, but purchased more of the more expensive protein foods than the English," and generally had a more varied diet. However, the conclusion is that: "By means of data in the foregoing pages one could, indeed, set out to 'prove' either that the French working class families were better off than the English, or that the English were better off than the French."¹²

¹² T. Schulz, "Household Expenditure in France, and in England," *Bulletin of the Oxford University Institute of Statistics*, XIII (August, 1951), 242. The families in the British sample seem to have been unusually assiduous account keepers as two thirds of them had kept accounts for the Oxford Institute not only for one but two

Schulz's article raises, without attempting to settle, another neglected problem—that is, the question of the goods and services supplied consumers without direct expense by different states or local communities. An evaluation of these goods and services presumably could have been made if the two studies had been planned in advance with a view to international comparisons. Schulz also raises questions in regard to taxes and points out the difficulty of comparing the French system of indirect taxes with the taxes paid by the wage earner and clerical groups in Britain. Quantification is difficult, but quite as necessary here.

PREFERENCE SCALES

The need for measures predicting the direction of consumer buying is becoming more urgent than ever before, as increases in productivity make it possible to produce more goods with a given amount of time and effort. Figures on income elasticity coefficients based on sample surveys of consumer expenditures may be used more in the future than in the past for analyses of consumer behavior¹³ and for prediction of future patterns as income change. They must, of course, be used with the recognition that they apply to families at

years, and a third of them for three years. It might be inferred that they were unusually thrifty families and that this accounts in part for their lower expenditure for food.

¹³ See Dorothy S. Brady's use of the income elasticity of quantities purchased of goods of different kinds in the derivation of the City Worker's Family Budget. The basic data used were expenditures of urban families of father, mother, and two children under sixteen years of age. The procedure is briefly summarized in the *Social Service Review*, XXIII (June, 1949).

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different income levels at a given point in time, and that changes over time may be affected by factors not present at the time when the income expenditure data were gathered.

Ruth Mack has pointed out the usefulness of measurements of income elasticity in describing "the differential impact of various income levels on different sorts of needs" and summarized the data available for the United States on income elasticities for different types of goods and services. Although there has been a good deal of interest in income elasticity measurement for a long time, the available materials on the subject are few and scattered. As Dr. Mack indicates: "The data do not seem to reveal

a consistent tendency for elasticities to increase, decrease, or remain constant with income; the same commodity class behaves differently in different samples."¹⁴

The only use of international comparisons of income elasticity that I have found appears in the Allen and Bowley volume on family expenditure.¹⁵ The range in the elasticities for twenty different groups of consumers are given in Table 1. They give some clues as to

¹⁴ Ruth P. Mack, *Economics of Consumption, A Survey of Contemporary Economics*, II, American Economic Association, p. 51.

¹⁵ R. G. D. Allen and A. L. Bowley, *Family Expenditure* (Westminster: P. S. King and Son, 1955).

TABLE 1. Range of Income-Elasticity Coefficients, Allen and Bowley:
Twenty Surveys of Family Expenditures, 1918-1929

Category and Group to Which It Applies	Lowest Coefficient Shown	Percent of This Group's Average Expenditure Going to Specified Category	Highest Coefficient Shown	Percent of This Group's Average Expenditure Going to Specified Category
Food				
Copenhagen, 1922, all classes	0.3	29		
Denmark, 1922, all classes	.3	31		
Liverpool, 1929, workers			0.9	47.0
Oslo and Bergen, 1918-1919 all classes			.9	52.0
Rent				
Belgium, 1928-1929, workers	.5	6		
Finland, 1920-1921, workers			1.1	4.5
Clothing				
Copenhagen, 1922, all classes	.9	12		
Oslo, 1912-1913, all classes			1.9	14.0
Fuel and light				
Belgium, 1928-1929, workers	.2	4		
Basle, 1912, all classes			1.2*	6.0*
Furniture				
Oslo and Bergen, 1918-1919 all classes	.5	3		
Poland, 1929, workers			2.2	3.5
Other items				
Oslo, 1912-1913, all classes	1.1	16		
Poland, 1929, workers			2.3	15.0

* Includes washing and cleaning materials.

what further studies may show as to interrelationships between elasticities for different groups of goods and services.

Table 2 shows the income elasticities computed by Allen and Bowley for the two groups of goods and services shown by most (but not all) studies to be at the opposite poles of income elasticity. There is some tendency for groups with comparatively low income elasticity for food to have a comparatively high income elasticity for "other" items, but there are a number of conspicuous exceptions. This table also compares their income elasticities for food with the percentage of expenditure going to food for these same groups of families. Here again there appears to be some correlation between the two measures but the relationship is not close.

The fragmentary data available on differences in income elasticity by family type indicates that some of the variations in the Allen and Bowley income elasticity coefficients may be caused by differences in the distribution of families by type in the samples they studied, as well as by differences in the income ranges of the various samples. Lewis' and Douglas'¹⁶ study of American wage earners' expenditures and Nicholson's¹⁷ analysis of British workers' expenditures both show striking differences in income elasticity at given income levels among families of different size. The same type of findings occurs in Allen's "Expenditure Patterns of Families of Different Types," which is derived from the United States "Con-

sumer Purchases Study of 1935-36" for urban wage earner and clerical families.¹⁸ Table 3 is based on the same study but presents figures for families in three occupational groups of three different types.

This evidence as to the need for data by family type within income and occupational groups reinforces what has been said earlier about the need for such refinements in making international comparisons of distributions of expenditures.

PLANS FOR FUTURE STUDIES OF CONSUMPTION PATTERNS

The International Labor Office, in cooperation with the Secretariats of the United Nations and of some other specialized agencies, held a meeting of experts on family living studies in September, 1955. The expert group had been asked to consider the objectives and scope of family living studies, to recommend broad outlines of methodology, to discuss means of dealing with special problems of making family living studies in underdeveloped countries, and to discuss and recommend the basic features of such studies.

The report of the group (which has become available in mimeographed form) makes a valuable contribution in its analysis of the uses of sample surveys of levels of living, and its statement of the principles of sample design and data collection in this field. The expert group concluded that "information, in the form of frequency distribution or in other ways, referring to special groups of the population, as for instance dif-

¹⁸ Oscar Lange, Frances McIntyre, and T. O. Yntima (ed.), *Studies in Mathematical Economics and Econometrics*, University of Chicago Press, (1942).

¹⁶ H. G. Lewis and P. H. Douglas, "Studies in Consumer Expenditures," *The Journal of Business*, University of Chicago, XX (October, 1947).

¹⁷ Nicholson, *op. cit.*, p. 360.

TABLE 2. Income Elasticities of Expenditure for Food and for Items Other Than Food, Rent, Clothing, Fuel and Light, and Furniture, and Percentage of Expenditure Going to Food, 1918-1929 (Allen and Bowley, Twenty Surveys of Family Expenditures)

Group Studied	Food	"Other Items"	Group Studied	Percent of Total Expenditure Going to Food	Income Elasticity for Food
Copenhagen, 1922, all classes	0.3	1.6	Copenhagen, 1922, all classes	29	0.3
Denmark, 1922, all classes	.3	1.6	USA., 1928-1929, farmers ^a	30	.7
Poland, 1929, workers	.45	2.3	Denmark, 1922, all classes	31	.3
Amsterdam, 1923-1924, all classes	.5	1.5	Germany, 1927-1928, salaried employees ^b	35	.8
Basle, 1921, all classes	.6	1.8	Germany, 1927-1928, officials	35	.7
Czechoslovakia, 1927, officials	.65	1.5	Amsterdam, 1923-1924, all classes	37	.5
USA, 1928-1929, farmers ^a	.7	1.2	USA., 1918, all classes ^c	38	.8
Germany, 1927-1928, officials	.7	1.3	Czechoslovakia, 1927, officials	42	.65
Czechoslovakia, 1929, officials	.7	1.5	Czechoslovakia, 1929, officials	43	.7
Basle, 1912, all classes	.7	1.7	Germany, 1927-1928, workers	45	.8
Oslo, 1912-1913, all classes	.8	1.1	Germany, 1927-1913, all classes	45	.8
Germany, 1927-1928, workers	.8	1.3	Oslo, 1912-1913, all classes	45.5	.7
Germany, 1927-1928, salaried employees ^b	.8	1.3	Basle, 1912, all classes	46	.6
Finland, 1920-1921, workers	.8	1.3	Basle, 1921, all classes	47	.9
USA, 1918, all classes ^c	.8	1.3	Liverpool, 1929, workers	52	.9
Czechoslovakia, 1929, workers	.8	1.3	Oslo and Bergen, 1918-1919, all classes	55.5	.45
Belgium, 1928-1929, workers	.8	1.5	Poland, 1929, workers	57	.8
Czechoslovakia, 1927, workers	.85	1.3	Belgium, 1928-1929, workers	58	.8
Oslo and Bergen, 1918-1919, all classes	.9	1.2	Czechoslovakia, 1929, workers	59	.85
Liverpool, 1929, workers	.9	1.7	Czechoslovakia, 1927, workers	60	.8
			Finland, 1920-1921, workers		

^a In Livingstone and Tompkins Counties, New York.

^b Clerks.

^c Wage earners and low/for medium-salaried workers.

TABLE 3. Income Elasticities for Selected Types of Expenditures of
Different Family Types in Columbus, Ohio, 1935-1936

Columbus, Ohio	Food	Housing and Fuel, Light, and Refriger- ation	Furnishings and Equipment	Clothing	Auto- mobiles	Medical Care	Formal Education
All families covered	.5362	.6139	.8084	1.0449	1.1708	.6733	1.4520
All occupations combined:							
Type II	.5443	.6342	.5791	1.2402	1.5404	.7565	1.9008
Type III	.5718	.6493	.7488	1.1648	1.5527	.9560	1.4621
Type VI	.6131	.6484	1.1780	1.1373	1.5402	1.1700	1.4022
Wage earner families:							
Type II	.4865	.3908	.5207	1.2507	2.1133	.9212	2.6128
Type III	.6782	.4942	1.4269	1.3617	1.9838	.5189	1.3938
Type VI	.6290	.5730	1.3604	.7700	1.6562	1.0186	1.3341
Independent business and professional families:							
Type II	.4123	.3677	.7408	1.0569	.7748	.7345	2.5939
Type III	.3862	.5776	1.7004	.8221	.4978	.5530	.2453
Type VI	.5504	.4603	1.7969	2.2250	1.1749	.5762	1.9626

SOURCE: US Department of Labor, Bureau of Labor Statistics, "Family Income and Expenditures in Nine Cities of the East Central Region, 1935-36," vol. II, *Family Expenditure Bulletin* No. 644 (Washington, DC: Government Printing Office, 1941).

Family type II—husband, wife, and one child under sixteen. *Family type III*—husband, wife, and two children under sixteen. *Family type VI*—husband, wife, and three or four children under sixteen.

Income elasticities computed in the United States Bureau of Labor Statistics under the direction of Helen H. Lamale.

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ferent family types, occupational groups, income classes, geographical regions" can only be obtained through such surveys. Its analysis of sampling and collection problems was particularly timely, as the difficulty of obtaining representative samples by the household-account-book method has frequently led to a disregard, in such studies, of the need for selection of the consumer units covered in accordance with sound sampling techniques.

The usefulness, from the point of view of international comparability, of the classification of income and expenditure adopted by the Seventh International Conference of Labor Statisticians was noted, but the group recommended further work by the ILO in the direction of standard classifications and definitions.

As a matter of fact, the group's report shows the need for further international consideration of definition of terms and of methodology in consumption studies. "The Group chose to use the expression 'household enquiries into levels of living' . . . because the studies under consideration are not concerned exclusively with the family proper but with the household as the unit of investigation, and because the term 'family living studies' is often associated with enquiries of a particular type, i.e. family budget enquiries. The Group also recognized that a household may consist of one person." It appears that this choice of terms was made without adequate consideration of differences in the economic organization of households and of families in different parts of the world. Further, the phrase "family budget enquiries" is being used in some countries to mean inquiries into consumer expenditures without data on

quantities of goods and services purchased, or on characteristics of the environment, such as housing, sanitation, or on goods and services received without direct expense, but in others (the United States, for example) "family budget enquiries" means inquiries resulting in *plans for family spending*, or into the cost of a given specifically defined standard of living. Budget inquiries in the latter meaning of the term are used to evaluate the purchasing power of wages, salaries, or pensions or allowances to dependent families.¹⁹

The ILO Expert Group recommended that:

The international agencies should aid in the development of sound methods of study and encourage international comparability. Although the formulation of uniform international questionnaires does not seem feasible at present, clear descriptions of tested procedures and recommended lists of standard definitions and classifications can be of great value. . . . As a practical step toward international comparability, groups of countries located within regions in which roughly similar conditions prevail should be encouraged to undertake coördinated enquiries into the respective levels of living, as far as possible covering similar population groups and using standard definitions and classifications.

Judging from the success of the projects coördinated under the auspices of the United Nations and the Organization of American States in connection with the population censuses of

¹⁹ See, for example, "The City Worker's Family Budget" mentioned above or "A Family Budget Standard," Research Department, Welfare and Health Council of New York City, 1955.

1950, much could be accomplished through increased international technical assistance in improving techniques and increasing international comparability in consumption surveys. It must be recognized that the technical assistance work of the international agencies and of individual governments having technical assistance programs is conditioned not only by the amount of money budgeted for technical assistance, but also by requests from governments. The number and timing of such requests for technical assistance will naturally depend on the relative urgency of administrative needs for statistics in this as compared with other fields.

In view of the extent to which governments are emphasizing programs to raise levels of living among families and single persons in the lower income brackets, it seems likely that there will be increased demands for consumption studies.

APPENDIX

BIBLIOGRAPHY OF SURVEYS OF CONSUMER EXPENDITURES COVERING 1946 OR LATER YEARS

The following list includes references to 175 reports on surveys of consumer expenditures made in 56 different countries since World War II.²⁰ The reports listed cover total outlays for goods and services by families and/or single consumer units. They were located either by this author in her own reading, or with the assistance of

²⁰ Surveys prior to 1935 were listed in *Studies of Family Living in the United States and Other Countries: an analysis of Material and Method*, Faith M. Williams and Carle C. Zimmerman (U.S. Department of Agriculture, miscellaneous publication, no. 223, December, 1935).

reference lists kindly supplied by Jean Mann Due of Peterboro, Ontario, Canada; Gertrude S. Weiss of the U.S. Department of Agriculture; Dorothy S. Brady, Chief of the Division of Prices and Cost of Living; and members of the staff of the Division of Foreign Labor Conditions, Bureau of Labor Statistics, U.S. Department of Labor, or by Elinor G. Aaron in the Department of Labor Library and the Library of Congress. (Miss Aaron was an intern at the U.S. Department of Labor in the summer of 1955 under the Wellesley-Vassar Intern Program.)

The annotations for surveys made in Latin America were prepared by Pauline Paro of the Division of Foreign Labor Conditions and those for surveys made in other areas were prepared by Miss Aaron, and by Miss Anna-Stina Ericson of the Bureau of Labor Statistics.

Additions, or corrections, can be sent to: Miss Faith M. Williams, Bureau of Labor Statistics, U.S. Department of Labor, Washington 25, D.C.

Symbols used in the following bibliography:

ST/SOA/1—UN Enquiries into Household Standards of Living in Less-Developed Areas, July 6, 1950.

ILO Year Book—International Labour Office, *Year Book of Labour Statistics*.

UN Stat. Papers, Series C—"Sample Surveys of Current Interest" (5th Report), UN Statistical Papers, Series C, No. 4, November 15, 1950.

UN Doc. E/CN.3/Sub.1/5—UN ECOSOC Doc. "Sampling Methods in Recent Family Living Studies," July 26, 1946 (mimeographed).

UN Doc. E/CN.3/Sub.1/9/Add.1—Un Doc. "Addendum to Interim Report on Sample Surveys Carried Out

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in Different Countries." August 13, 1948.

Monthly Labor Review—*Monthly Labor Review*, US Department of Labor, Bureau of Labor Statistics, Washington, DC.

EGYPTIAN SUDAN

The New Cost of Living Indices (1950 Budget Enquiry); Egyptian Sudan Department of Economics and Trade, Khartoum, 1952, pp. 15–28.

Sudanese classified and unclassified government workers, average expenditures for major categories, by income level and family type; British in Sudan, total expenditure for major categories, all single and married persons, by two income levels (married groups), by two family sizes, 1950.

GOLD COAST COLONY

Accra Survey of Household Budgets, Statistical and Economic Papers, No. 2; Office of the Government Statistician, Gold Coast, December, 1953.

453 African families, Accra, of 2–8 persons, with one wage earner, with annual wage incomes of £50–£180 (Lower-income families). Survey period 30 days, mid-month to mid-month; expenditures for clothing and durable goods estimated for 12 months preceeding survey. Proportionate expenditures for major categories, with details for local food, number of families paying rent. Survey apparently undertaken to provide basis for price index to reflect purchases of low-income wage earning families in Accra.

1947 study. Report not available. Source: ST/SOA/1, p. 92.

KENYA

The Pattern of Income, Expenditure, and Consumption of African Labourers in Nairobi, October–November, 1950; The East African Statistical Department, February, 1951.

African employees, excluding do-

mestics, in Nairobi City, with monthly earnings of approximately 42s. Average monthly expenditures for major categories, with detail for food by tribe and per employee by family status (i.e., whether or not receiving contributions, living with dependents). 52 cases.

RHODESIA, NORTHERN

Mitchell, J. C., and Barnes, J. A., The Lamba Village: Report of a Social Survey, School of African Studies, New Series, No. 24; Rondebosch, University of Cape Town, May, 1950, 69 pp. Ch. IX and *passim*. Source: ST/SOA/1, p. 147.

RHODESIA, SOUTHERN

Family Expenditure Survey, Economic and Statistical Bulletin of Southern Rhodesia; Central African Statistical Office, S. R. Causeway. Source: Vol. XXVIII, No. 14, pp. 10–21; No. 17, pp. 7–19; No. 20, pp. 7–23; Vol. XIX, No. 1, pp. 7–18.

European households, selected towns, in which head earned £90 or less monthly; occupations—government, railways, mines, metals and engineering, construction. Average expenditure for major categories by towns, with detail for beef and European foodstuffs; weighted total for country. Total expenditure for year, detail for each category for country (April issue). Year by quarters (April, July, October, 1950; January, 1951); number of households varied from 213 to 285.

SIERRA LEONE

Report on the 1951 Freetown Survey of Household Budgets; Government Statistician, Sierra Leone, Freetown, 14 pp.

383 households showing percentage of expenditures for eight major categories, by expenditure classes (20 shilling classes ranging from under 80 shillings to 360 shillings and over), with details for selected food items by

income groups and expenditure classes. Survey period—November 12-December 11, 1951.

TANGANYIKA

Tanganyika European Family Budget Survey, 1951-52; East African Statistical Department, East African High Commission. Report not available. Source: ILO Year Book, 1954, pp. 296-97, 303-304.

UGANDA

The Pattern of Income, Expenditure and Consumption of African Unskilled Labourers in Kampala, September, 1953; East African Statistical Department, January, 1954 (mimeographed, 16 pp. and tables).

200 African laborers earning from 43s. to 55s. a month, September, 1953. Average expenditure, all cases, for major categories; average expenditure by income level for major categories with detail for food. Detail for food by tribe. Data from similar surveys in 1948-1949, 1950, 1951, 1952 appeared in earlier publications of same title.

The Pattern of Income, Expenditure and Consumption of African Unskilled Labourers in Jinja, November, 1952; East African Statistical Department, May, 1953 (mimeographed).

130 African unskilled laborers having a basic wage of 40s. to 45s. monthly; November, 1951. Average expenditures for major categories by income level, by family type (living with dependents or not), with detail for food. Similar survey in November, 1951 among 96 workers earning 36s. to 42s. per month.

CEYLON

Central Bank of Ceylon, Department of Economic Research, Survey of Ceylon's Consumer Finances; Colombo, 1954.

970 households (1085 spending

units) representing random sample of households in Ceylon, May, 1953. Average monthly income and expenditures from April, 1952, to March, 1953, per spending unit for all Ceylon, the Non-Estate Sector, and the Estate Sector for major categories, in considerable detail; for all spending units by monthly income levels.

Report of the Director of Census and Statistics on the Middle Class Family Budget Inquiry; Ceylon Department of Census and Statistics, Sessional Paper XVI, 1950, Colombo, Ceylon Government Press, 1950, 21 pp.

404 middle-class families, Colombo with incomes of Rs. 100 to 1100. Average expenditures, 1949, per consumption unit and per family by income unit for major categories; some detail.

HONG KONG

A Report on Post-War Movements in the Cost of Living in Hong Kong; Department of Statistics, Hong Kong, January 10, 1950, 69 pp.

352 government and commercial firm employees' households (March 9-April 5, 1947), with income limits of household head of \$200 per mensem for government employees (maximum basic income) and of \$350 per mensem for commercial firm employees (maximum total income). 309 government and commercial firm employees' households and others (June 3-July 3, 1948), with maximum income limit of household head of \$400 per mensem. Both surveys covered mainly clerical, skilled technical and policy occupations, reported average weekly expenditures on food, average monthly expenditures all other items, by expenditure categories, with details for

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food. Size of households also shown by expenditure categories.

SINGAPORE

Malayan Union and Singapore: Joint Wage Commission, Interim Report on Wages by the Joint Wage Commission, July 29, 1947, Kuala Lumpur; Malayan Union Government Press, 1947. Report not available. Source :ST/SOA/1, p. 167-8.

1949 Study. Report not available. Source: ST/SOA/1, p. 168.

INDIA

Survey of Middle Class Family Budgets in Madras City. Source: The Madras Mail, American Consul, Despatch No. 627, May 17, 1953.

336 middle-class families, January-June, 1952. Average monthly expenditure for major categories.

Report on an Enquiry into the Family Budgets of Industrial Workers in Beawar (Ajmer); Labour Bureau, Ministry of Labour, Government of India, Publication No. 21.

Workers in cotton textile and bidi manufacturing and work for the municipality; usable data from 371 families, 81 single men. Detail on average monthly expenditures for major categories for families and single men, 1951.

Ramamurti, B., Agricultural Labour: How They Work and Live; Labour Bureau, Ministry of Labour, Government of India, 1954, 137 pp.

About 11,000 families in approximately 800 villages, 1950-1951. Average annual expenditure for major categories by area; average annual per capita expenditure for major categories for agricultural labor and all rural families (1949-1950) with detail for food; average annual expenditure by kind of laborer for each district.

Family Budget Enquiry in 23 Towns of West Bengal, including Calcutta, 1950-1951. Report not available. Source: State Statistical Bureau, Government of West Bengal, 1955: Report on the Comparative Costs of Living in the Different Towns of West Bengal during November, 1950.

September, 1950-February, 1951 study in 23 important towns, with view to preparing cost of living indexes. Prices of all consumption items collected. Sample of families represented all income levels except that of population living in *bustee* (shanty town) areas.

Survey of Economic and Social Conditions of Workers' Families in Jagaddal, 1949. Report not available. Source. UN Stat. Papers, Series C., No. 4, November 15, 1950.

749 families, March-May, 1949, in industrial area about 30 miles from Calcutta. Two earlier surveys in 1942 and 1945. Information collected on income, family expenditures, housing, sanitary conditions, literacy, sickness, migration. Data provided for calculating suitable weights for the working class cost of living index; price quotations also collected at regular intervals during the investigation.

Deshpande, S. R., Report on an Enquiry into the Cost and Standard of Living of Plantation Workers in South India; Labour Bureau, Ministry of Labour, Government of India, Publication No. 3, Calcutta, 1949, 109 pp.

531 families on tea, coffee, and rubber estates in Madras, Coorg, and Cochin, July-September, 1947. Average weekly expenditures per family by income, major categories by area and type of estate. Some detail for rubber estates.

Deshpande, S. R., Report on an Enquiry into the Cost and Standard of Living of Plantation Workers in Assam and Bengal; Labour Bureau, Ministry of Labour, Government of India Publication No. 4, Delhi, 1948, 112 pp.

Tea plantation workers in Assam and Bengal—Surma Valley, 200 families and single persons; Assam Valley, 560 families; Bengal, 297 families (Darjeeling, 107 families; Chittagong, 35; Terai, 33; Dooars, 123)—1 week, March 4 and June 28, 1947. Average weekly expenditures by area, income level for major categories, and details for all families.

Haldar, S. K., Report on an Enquiry into the Living Conditions of Plantation Workers in Jalpaiguri District (Dooars); West Bengal, Labour Directorate, Government of West Bengal, 1951, 157 pp.

2506 workers, June, 1947–April, 1948. Average expenditure for major categories for families and single workers. Average weekly expenditure per family for major categories by expenditure level; by expenditure level in tea gardens managed by Indian and European concerns separately; with detail.

Enquiry into the Family Budgets of Industrial Workers in Bhopal City; Ministry of Labour, Labour Bureau. Report not available. Source: Indian Labour Gazette, October, 1953, Vol. 11, p. 324; see also UN Stat. Papers, Series C, No. 5.

381 workers (363 families, 18 single men) employed in cotton textile, paper, match and bidi industries, December 1950–January 1952.

Haldar, S. K., Report of an Enquiry into the Living Conditions of the Tea Plantation Workers in Darjeeling-

Terai, West Bengal, 1948; West Bengal, Government Press, 1952, 115 pp. Report not available. Source: Indian Labour Gazette, December, 1952, Vol. 10, pp. 465–69.

447 budgets in Darjeeling-Terai, June–July, 1948. Average weekly expenditure for major categories.

Haldar, S. K., Report on the Family Budget Enquiry into the Living Conditions of the Tea Plantation Workers in Darjeeling, West Bengal, 1948; West Bengal Government Press, Alipore, West Bengal, 1953. Report not available. Source: Indian Labour Gazette, January, 1953, Vol. 10, pp. 559–562.

776 budgets in Darjeeling, September–November, 1948. Averages for all families and by income levels.

Ministry of Commerce, Office of the Economic Adviser, Report on an Enquiry into Family Budgets of Middle Class Employees of the Central Government; Delhi, 1949, 314 pp.

6198 households with income from Rs. 30 to 500 monthly. Records of accounts quarterly in November, 1945; February, May, August, 1946. Average monthly expenditure for major categories, each area; total monthly expenditure per family by income level for each category, each area, with considerable detail by area. Detail by income level for each area and summary of quarterly budgets.

Survey of Economic and Social Conditions of Families Living in Calcutta. Report not available. Source: UN Stat. Papers, Series C, No. 4, p. 12.

Undertaken in 1949 for a “Comprehensive study of the family budget and consumption patterns, disintegration of joint family system, employment, occupation, sickness, and vari-

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ous other socio-economic aspects of life of the different classes of people living in the Calcutta area."

Report on the Diet and Health Survey of Middle Class Families in Bombay City, 1949; Indian Statistical Institute (Bombay Branch), 42 pp. Report not available. Source: ST/SOA/1, p. 109.

Singh, Arjan, and Singh, Ajaib, Family Budgets 1945-1946 to 1947-1948 of Cultivators in East Punjab; Board of Economic Inquiry, East Punjab, Publication No. 2, Ludhiana, 1949, 88 pp. Report not available. Source: ST/SOA/1, p. 126.

Report on the Enquiry into the General Conditions and the Family Budgets of Labour in Coffee Plantations in Mysore; Government of Mysore, Department of Labour, Bangalore, Government Press, 1948, 39 pp. Report not available. Source: ST/SOA/1, p. 109.

Survey of Family Budgets of Lower Income Employees of the Government of Bengal, 1946; Indian Statistical Institute. Report not available. Source: UN Stat. Papers, Series C, No. 2, p. 28.

Sheh, Vimal, and Shah, Sarla, Bhuvel: Socio-Economic Survey of a Village; Bombay, Vora and Company Publishers, Ltd., 1949, 154 pp. Report not available. Source: ST/SOA/1, p. 109.

Government of India, The Indian Labour Year Books.

The main results of the family expenditure enquiries conducted by the Labour Bureau in 1947 among planta-

tion workers of South India and North India have been published on pp. 492-95 of the 1949-1950 issue of the Year Book. Subsequently, the Labour Bureau conducted family expenditure enquiries at Beawar and Bhopal during the period July, 1951 to June, 1952 and December, 1950 to January, 1952 respectively, and the main results of these enquiries were published in the 1952-1953 issue of the Year Book.

ISRAEL

Hartal, Pinhas, Changes in Living Standards in Israel; Middle Eastern Affairs, Council for Middle Eastern Affairs, New York, February, 1953, pp. 37-50.

960 urban working families, August, 1950; 1004, March, 1951; in 3 cities, 6 smaller towns. Average expenditure for all cases for major categories.

1946 Study. Report not available. Source: UN Doc. E/CN.3/Sub.1/5, p. 14; see also ILO Year Book, 1949-1950, pp. 302-5.

JAPAN

Office of the Prime Minister, Bureau of Statistics, Family Income and Expenditure Survey.

Approximately 4200 urban families in 28 cities; annually since 1950. Average monthly expenditure for all cities; for 28 cities, for Tokyo alone; by industry, occupation, income, family size.

Annual averages, 1950 through 1954, published in Japanese Yearbook of Labor Statistics, 1954 (Ministry of Labor, Division of Labor Statistics and Research), with monthly averages for 1954. Monthly averages published currently by cities in Monthly Bulletin of Statistics, Bureau of Statistics, Office of the Prime Minister, and in Japanese Economic Statistics, Japanese Government Economic

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Counsel Board, major categories, all urban families and urban workers' families.

1953 Study. Report not available. Source: ILO Year Book, 1954, pp. 296-297, 300-304.

The Social Welfare Statistics Monthly Report, October, November, and December, 1951, Vol. 1, Nos. 10, 11, 12; Division of Health and Welfare Statistics, Welfare Minister's Secretariat. Report not available.

Report of Special Consumer Price Survey; Prime Minister's Office, Bureau of Statistics, February, 1950.

203 cities, 149 towns, 32,869 households, May, 1949. Households excluded: those with 1 member or with farmers or "ordinary" members cultivating fields of more than 0.245 acres (1.225 in Hokkaido), those with family members often absent or where majority of members eat 2 or 3 meals away. Tables include 28 cities where survey was made primarily to obtain data on consumer prices. Average monthly expenditure per household, by each city or town, with detail for food.

KOREA

Monthly Statistical Review, The Bank of Korea, January, 1955, pp. 60-63.

Monthly expenditures for major categories, wage and salary earners in Pusan and Seoul, for farmers by area, published monthly since 1951. Average number of cases for wage and salary earners: 1951, 46; 1952, 78; 1953, 72; 1954, 86; for farmers, 300.

National Economic Board, Wage Stabilization Committee, Studies of Incomes and Expenditures, 1947-1948. Complete report not available.

The South Korean Wage Earner since the Liberation; Monthly Labor Review, April, 1949, pp. 403-4.

Income and other receipts, expenditures of families of wage and clerical workers, government clerical and administrative employees, merchants, monthly in the fall of 1947, spring, 1948. Average income, other receipts, average total expenditures by 7 occupational groups, average expenditures for major categories by wage earners, March, 1948.

PAKISTAN

Khan, Malik Amanat, and Rasul, C., Karam Farm Accounts and Family Budgets of Cultivators in Punjab, 1949-50; Board of Economic Inquiry, Punjab Publication No. 108, 286 pp.

51 family accounts, July 1, 1949 to June 30, 1950 in Lyallpur, Gujranwala, Jhelum, Muzaffargarh districts. Big landowners, peasant proprietors, tenant cultivators, agricultural laborers, artisans, other maeens, shopkeepers. Total expenditure for major categories per family, by occupation and district, and per adult male unit. Detailed family budgets for each group with detail for food.

REPUBLIC OF THE PHILIPPINES

Levels of Living Survey of Wage Earners' Families in Manila, November 15, 1951, Tables 1-20; Department of Commerce and Industry, Bureau of the Census and Statistics. Unpublished (mimeographed by the Statistical Center, University of the Philippines, 1955). See also ILO Yearbook, 1954, pp. 296, 300-302.

Incomes and Expenditures of Metropolitan Manila Households during 1954, Sixth Annual Report, Central Bank of the Philippines, Pt. III, Div. A, Ch. 1, Sec. C, Manila, 1955, pp. 20-26.

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Levels of Living of Wage Earner Families in Manila, December 1947, *Journal of Philippine Statistics*, Vol. IV, Nos. 1-6 (January-June, 1949), pp. 199-221.

95 wage-earner families, Manila, December, 1947. Expenditure by category.

Levels of Living of Wage Earner Families in Manila, December, 1946, *Journal of Philippine Statistics*, Vol. III, No. 1-12 (January-December, 1947), pp. 147-181. Report not available. Source: ST/SOA/1, p. 163.

RYUKYU ISLANDS

Monthly Family Income and Expenditures Survey. Report not available. Source: UN Stat. Papers, Series C, No. 6, June, 1953.

AUSTRIA²¹

1952 Study. Report not available. Source: ILO Year Book, 1954, pp. 296, 300-303.

1951 Study. Report not available. Source: ILO Year Book, 1953, pp. 280 ff.

BELGIUM

Jacquemyns, G., *Mode de Vie des Ouvriers*, 1948-49; *Revenus et Dépenses d'un Ménage "Moyen"*; Institut Universitaire d'Information Sociale et Économique, 1951, No. 2, Bruxelles, Parc Léopold, 63 pp.

410 households, 277 wage earners, 110 clerical workers, December, 1948 to November, 1949. Average expenditure per family for major categories.

Jacquemyns, G., *Les Budgets Familiaux d'Ouvriers et d'Employés*,

²¹ "The Chamber of Labor in Vienna has conducted inquiries since 1946 in a series of selected households, but the Statistical Office considers the results unrepresentative and of little value." See UN Doc. E/CN.3/Sub.1/5, p. 8.

1947-48; Institut Universitaire d'Information, Sociale et Économique, 1949, No. 1, Bruxelles, Parc Léopold, 56 pp.

254 wage earners', 116 clerical workers' families; July 15-August 15, November 15-December 15, 1947; in 6 provinces; average expenditure for both family groups separately for major categories.

CZECHOSLOVAKIA

Surveys on Family Living Conditions of Nonagricultural Groups, 1947-1948. Report not available. Source: UN Doc. E/CN.3/Sub.1/5; also UN Doc. E/CN.3/Sub.1/9/Add. 1.

DENMARK

Forbrugsundersogelsen 1948 og det nye pristalsbudget; *Statistiske Efterretninger*, Vol. 41, No. 58 (November 1, 1949); Danish Statistical Department, Copenhagen.

443 wage earners' and clerical workers' families, 207 in Copenhagen, 192 in provincial cities, 44 in smaller towns, surveyed in May-June, 1949, covering year 1948. Sample in provincial cities and small towns proportional to number of hourly workers and salaried employees in government service and private industry. Families whose yearly expenditures less than 4000 kroner excluded. Expenditure per family by major categories; expenditure for major categories and family distribution by income level in each town group. See also *Monthly Labor Review*, April, 1950, pp. 389-392.

FINLAND

Kihlberg, Jaakko, *Urvalet av Representativt Budget Material for den nya Levanskostnadsindexen*, *Social Tidsskrift*, Nos. 3-4, 1952, pp. 106-11; Nos. 11-12, 1951, pp. 424-433.

180 households; average income 500 marks. Expenditure for major categories with detail for food. Study based on sample taken from a larger

study (Elinkustannustutkimus, Helmikuu 1950-Tammikuu 1951) which was never analyzed.

Elinkustannustutkimus. Helmikuu 1950-Tammikuu 1951, Sosiaalisia Erikoistutkimuksia, Ser. 32, No. 21, Suomen Virallinen Tilasto, Helsinki, 1954.

538 families of wage earners and salaried employees, 11 cities and 4 market towns, February, 1950-January, 1951. Excludes families with children over 16 or other persons living with them. Food expenditure is for 4 two-week periods. Expenditure for major categories, detail by family size within location; by family size within expenditure group and location.

1947 Study. Report not available. Source: UN Doc. E/Cn.3/Sub.1/5, p. 11.

FRANCE

Une Enquête sur les Dépenses des Ménages d'Exploitants Agricoles en 1952, Bulletin Mensuel de Statistique, Supplément Juillet-Septembre, 1954, pp. 44-52.

652 farming families cultivating at least 1 hectare in 1952. Expenditures with detail for major categories by farm size, 4 areas of the country.

Les Dépenses et les Consommations des Ménages à Paris, Rennes et dans 17 Grandes Villes de Province (Novembre-Décembre, 1951); Institut National de la Statistique et des Etudes Économiques pour la Métropole et la France d'Outre-Mer, Bulletin Mensuel de Statistique, Supp. 4 (October-December 1953), pp. 60-78.

Bordeaux, Clermont-Ferrand, Dijon, Lille, Limoges, Lyon, Marseille, Montpellier, Nancy, Nantes,

Orléans, Paris, Poitiers, Reims, Rennes, Rouen, Strasbourg, Toulouse; 281 cases in Paris, 349 in Rennes, 1949 in other cities; December 1951. Data presented separately for Paris, Rennes, and provincial cities combined. Expenditure (in percent), for major categories with detail for each category by family type, occupation of family head, by 5 levels of expenditures per consumption unit, ranging from less than 3000 francs to more than 6000 per week. Total weekly expenditure for each family type, by occupation and expenditure level for each category.

Une Enquête par Sondage sur l'Alimentation et les Dépenses des Ménages d'Ouvriers Mineurs du Groupe de Lens, Bulletin Mensuel de Statistique, Supp. 3 (October-December, 1952), pp. 63-71.

142 miners' families in Lens, mid-June through July, 1951. Weekly expenditure for major categories by type of miner, number of miners, type of family (2 adults with 0 to 3 children, 3 adults with 0 to 3 children), detail for each category by family type. Total weekly expenditure and detail for each category by level of living (relation of total expenditures to number and age of family members).

Les Dépenses des Familles de Salariés de la Région Parisienne au Cours de l'Hiver 1949-1950, et de l'Automne, 1950, Bulletin Mensuel de Statistique, Supp. 4 (January-March, 1953), pp. 38-39.

601 households, winter of 1949-1950, 411 households, autumn, 1950. Wage earners, and clerical workers with 0 to 3 children under 16. Weekly expenditure, all cases, by family size for major categories with detail for food. Details given only for families with 0 to 2 children.

COMPARISONS OF PATTERNS OF FAMILY CONSUMPTION

Les Budgets des Familles de Salariés dans quelques Grandes Villes de Province en 1949 et en 1950, Bulletin Mensuel de Statistique, Supp. No. 4 (January-March, 1953), pp. 40-1.

Wage earners and clerical workers with 0 to 3 children under 16. In winter, 1949-1950—Marseille, 113 cases; Lyon, 234 cases; Lille, 249 cases. In autumn 1950—Marseille, 158 cases; Bordeaux, 205 cases; Rouen, 199 cases. For each city, expenditures by family size for major categories, weekly expenditure each family size.

Les Dépenses et l'Alimentation des Familles de Mineurs à Saint-Étienne au Printemps 1949, Bulletin Mensuel de la Statistique, Supplément Vol. 1, January-March, 1950, pp. 89-99.

213 miners' families, Saint-Étienne, spring, 1949. Expenditure for major categories, for French miners by type, and foreign miners, with detail for each category. Expenditure for major categories by weekly expenditure per consumption unit. Total expenditure each category according to positions of miners.

Les Dépenses et les Consommations des Familles de Salariés de la Région Parisienne pendant l'Automne 1948, Bulletin de la Statistique Générale de la France, Supplément Trimestriel, Vol. 37 (October-December, 1949), pp. 409-447.

758 cases, families with 3 or less children, whose head was wage earner in position below foreman or accountant; October-December, 1948, in Paris plus a few cases in Lille, Marseille, Saint-Étienne. Weekly expenditure, detail for major categories by type of work, family type, number of wage earners.

Les Dépenses de Certaines Familles de Salariés au Printemps, 1945, à Auxerre, Lyon, et Marseille, Bulletin de la Statistique Générale de la France, Supplément Trimestriel, Vol. 37 (July-September, 1949), pp. 302-312.

Auxerre: 50 families of 3 to 4 members whose head was a worker in 1946, employed or without occupation in 1948; May 24 to June, 1948. Expenditure for major categories by family type with detail.

Lyon and Marseille: 58 households in Lyon, 225 in Marseille; families with 0 to 3 children and head who is wage earner or without occupation; April to July, 1948. Expenditure for all cases, each city, for major categories, some detail.

Premiers Résultats Concernant les Dépenses des Familles de Salariés de la Région Parisienne, au Printemps, 1948, Bulletin de la Statistique Générale de la France, Supplément Trimestriel, Vol. 37 (January-March, 1949), pp. 37-54.

1000 families with 3 or less children under 16, whose head was skilled wage earner, with status below foreman or accountant, or unemployed; April to July, 1948. Families with members of other than children living with them excluded. Average expenditure for major categories by family size and occupational group with detail for food. Average weekly food expenditure by type of household.

Les Dépenses et l'Alimentation de Ménages de Salariés à Marseille, Lille, et Saint-Étienne pendant l'Automne, 1948, Bulletin Mensuel de la Statistique, Supp. Vol. 1 (January-March, 1950), pp. 80-88.

Families of wage earners and clerical workers; 161 families (549 per-

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sons) in Marseille, 117 families (358 persons) in Saint-Étienne, 210 families (775 persons) in Lille whose head was wage earner in 1946; October, November, December, 1948. Average weekly expenditure for major categories by city by family size, with detail for each category.

Sauvy, Alfred, *Les Dépenses de 939 Familles de Militaires en Novembre 1946*, Population Vol. 2, No. 3 (July-September, 1947), pp. 421-449.

939 cases; October to November, 1946. Income and expenditures by major category by family size within rank; total and food expenditures separately for noncommissioned and commissioned officers in lower ranks by size of place of residence, by family size; according to whether family head was separated from his family.

Girard, Alain, *Les Conditions d'Existence des Familles, Les Budgets Familiaux en 1946*, Population Vol. 3, No. 1 (January-March, 1948), pp. 11-46.

891 cases; Paris area (Paris, Seine, communities bordering on Seine-et-Oise) October-November, 1946. Average expenditures per family and per consumption unit for each occupation, by family size for major categories. Average expenditure per family and per consumption unit for food (detail), all cases. 1971 cases; summary of 3 inquiries, Paris area, 1946. Average expenditure per family and per consumption unit by family size and by occupation for major categories.

Sauvy, Alfred, *Les Conditions d'Existence des Familles, Les Dépenses de 1080 Familles en Mars et en Juin, 1946*, Population Vol. 2, No. 2, (April-June, 1947), pp. 243-266.

419 questionnaires for March, 1946 (March-April) and 661 for June, 1946 (June-July); Paris area. Average expenditures for major categories by family size and by occupational groups. Average expenditure per consumption unit for clothing, food, housing. Findings for March and June presented separately.

Budgets de Familles de Salariés de la Région Parisienne en 1946, Bulletin de la Statistique Générale de la France, Supplément Trimestriel, Vol. 36 (April-June, 1948), pp. 154-69.

1345 families (5015 people), 2 weeks during March-April, 1946; 960 families (3481 people), 2 weeks during November, 1946. Skilled workers and lower-salaried clerical workers in department of Seine. Average expenditure for major categories by occupation and family type; detail for food.

Budgets de Familles de Salariés dans quelques Grandes Villes de Province en Novembre, 1946, Bulletin de la Statistique Générale de la France, Supplément Trimestriel Vol. 37 (July-September, 1949), pp. 291-297.

595 households of wage earners, 16 provincial cities: Bordeaux, Clermont-Ferrand, Dijon, Lille, Limoges, Lyon, Marseille, Montpellier, Nancy, Nantes, Orléans, Poitiers, Reims, Rennes, Rouen, Toulouse; November 8-21, 1946. Expenditure by groups of cities and for each city for major categories; detail for food. Total expenditures by family type and location, expenditure for major categories by level of total expenditure.

GERMANY

Der Verbrauch in Arbeitnehmerhaushaltungen im Jahr 1954, Wirtschaft und Statistik, 7 Jahrgang N.F. Heft 5 (May, 1955), pp. 274, 278-281.

COMPARISONS OF PATTERNS OF FAMILY CONSUMPTION

Average of 202 households, 1954. summary of quarterly studies of family accounts. Families of 4, with 1 child under 15, in cities of over 20,000. Wage earner, employees', and officials' families with monthly income between 275-450 DM. Data for similar studies 1949-1953, also given; 1949 excludes Schleswig-Holstein and Niedersachsen. Average annual expenditure for major categories with detail for food, housing, clothing. Monthly expenditure per household, 1950-1954, for major categories, each month, 1954, in Appendix.

Der Verbrauch in Arbeitnehmerhaushaltungen im Jahr 1953, reprint from *Wirtschaft und Statistik*, 6 Jahrgang, N.F., Heft 5 (May, 1954), pp. 217-225, 267-269.

Average of 272 households of wage earners, clerical workers, and officials, 1953. Middle-income group with average monthly expenditures of 275-450 DM. Average monthly expenditure, detail for food, household equipment, clothing, 1949-1953.

Wirtschaftsrechnungen in Privaten Haushaltungen: Der Verbrauch in Arbeitnehmerhaushaltungen im Jahr 1951, *Wirtschaft und Statistik*, 4 Jahrgang, N.F. (May, 1952), pp. 217-222.

115 households in 1949; 224 in 1950; 240 in 1951. Wage earner, clerical workers' and officials' families of 4, 1 child under 14, with monthly expenditures between 240-400 DM (200-350 in 1949 and 1950). Average monthly expenditure for major categories with detail for food. Published quarterly for varying numbers of families through second quarter, 1953 (October, 1953, p. 486). Expenditure limits raised to 275-450 DM in 1953.

1952-1953 Studies. Reports not available. Source: ILO Year Book, 1954, pp. 296 ff.

1950-1953 Studies. Reports not available. Source: US Department of Labor, Bureau of Labor Statistics. Labor Statistics Series. Germany (West), in 1953, July, 1954.

Monthly accounts, 150 2- and 3-person low-income urban families, including those receiving social insurance, welfare aid, or pensions.

Die Entwicklung des Verbrauchs in Arbeitnehmerhaushaltungen seit 1949, *Wirtschaft und Statistik*, 5 Jahrgang, N.F., Heft 5 (May, 1953), pp. 204-210.

Summary of monthly inquiries since 1949; 115 families in 1949; 224 in 1950; 240 in 1951; 259 in 1952. Average monthly expenditure for major categories, detail for housing and clothing.

Verbrauchsstruktur van Arbeitnehmerhaushaltungen, 1949, *Statistische Berichte, Arb. No. VI/4/2* (August, 1950), mimeographed 4 pp. and tables Statistisches Amt des Vereinigten Wirtschaftsgebietes.

Accounts kept by 115 households; 4-person families of wage earners, clerical workers and officials with monthly expenditures of 200-250 DM; 1949. Average expenditure for major categories, each quarter and for year (excludes Schleswig-Holstein, Niedersachsen, Baden). Average monthly expenditure for major categories for 3 occupational groups, by area, with detail for food. Categories given in some detail on all tables.

Der Verbrauch in Arbeitnehmerhaushaltungen, *Wirtschaft und Statistik*,

Vol. IV (March, 1952), pp. 107-110.

743 households; 1949. Average expenditure for major categories by size of community within level of annual expenditure. Some detail.

Der Verbrauch in Arbeitnehmerhaushaltungen, Wirtschaft und Statistik, Vol. IV, August, 1952, pp. 319-323.

Continuation of report on 1949 study. Average monthly expenditure for rent by household size and as percent spent within expenditure level. Average expenditure for major categories by percent of total expenditure paid for rent, within level of annual expenditure.

Die Lebenshaltung von 70 3- und 4-Köpfigen Arbeitnehmerfamilien in Württemberg-Baden vor und nach der Währungsreform; Statistische Monatshefte Württemberg-Baden, IV, 4 (April, 1950), pp. 104-107.

3- and 4-member families of wage earners and clerical workers, 1947-1948 and 1949. Income limit of 200-350 DM. Monthly and annual expenditure for major categories by income level.

Living Conditions: Family Living Studies: Germany, 1948-1949; Industry and Labour, January, 1950, pp. 28-29.

1502 wage-earner families, 638 salaried employees, accounts kept for September, 1948; 508 wage-earner families, 378 salaried employee families, December, 1948; in British Zone, conducted by trade unions and State statistical offices. Data obtained monthly, 1949 (654 in January, 741 in February, 583 in March). Expenditure per family for major categories, wage earners and salaried employees presented separately, September, 1948, March, 1949. Average per

capita income in original study. (K. Osterkamp, "Die Neuen Wirtschaftsrechnungen," Mitteilungen des Wirtschaftswissenschaftlichen Instituts der Gewerkschaften [Cologne], Vol. II, No. 8, October 1, 1949, pp. 11-17; also K. Osterkamp "Die Wichtigsten Einzelerkenntnisse aus der Haushaltsbucherhebung," *op. cit.*, Supp. to Vol. II, Nos. 4-5, June 1, 1949.)

GREAT BRITAIN

Family Expenditures in 1949; Oxford University Institute of Statistics, Vol. 13, No. 4 (April, 1951), pp. 128-40; Vol. 13, No. 5 (May, 1951), pp. 141-150.

Comparison of 1949 study with similar one for 1948 (44 of the 65 families participated in both). 64 wage earners' families with at least 1 dependent child (292 persons), 6 cities in England. 1949. Weekly expenditures for major categories. No. 5 continues 1949 study with emphasis on food consumption, nutrition.

Schulz, T., Working Class Household Expenditure in 1948; Oxford University Institute of Statistics, Vol. 12 (March, 1950), pp. 81-108.

Food Expenditure and Nutrition in 1948, pp. 99-108. 65 accounts for 4 consecutive weeks, August and November, 1948, for new and unchanged families since previous inquiry. Expenditures for major categories. Families stating income and those stating household expenditure only, presented separately.

Schulz, T., Working Class Income and Household Expenditure; Oxford University Institute of Statistics, Vol. 9 (May, 1947), pp. 133-69.

151 families (727 persons); household accounts for 2 weeks in June or July, 1946, urban workers with at least 1 dependent child at home. Weekly expenditure for major cate-

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gories with some detail. Separately for families which were new, changed, or unchanged since 1945 study. Families stating income and those giving household expenditure only, presented separately.

GREECE

Cost of Living Expenditures: Worker Families in Greece, February-May, 1949; Labor and Manpower Division, Economic Coöperation Administration Mission to Greece, 1949 (mimeographed), 33 pp.

500 families (2705 persons), skilled and unskilled manual workers; February to May, 1949, 5 urban areas with detailed data for Athens-Piraeus. All family sizes covered though 407 of the 500 cases were groups of 4 to 6 members. Average expenditure per family by major categories. Average daily expenditures per person and per family by family size for food, other daily living costs; average monthly expenditures for fuel, personal care, illness; average annual expenditure for clothing, household equipment.

GREENLAND

1950-1951 Study. Report not available. Source: ILO Year Book, 1954, p. 297.

HUNGARY

Weekly Expenditures of a Hungarian Working-Class Family of Four; American Legation, Budapest, Despatch No. 400 (January 2, 1952). Prepared by Embassy on basis of official Hungarian data and observed prices.

Average expenditure for major categories.

1947 Study. Report not available. Source: UN Doc. E/CN.3/Sub. 1/5, p. 12.

1946 Study. Report not available. Source: UN Doc. E/CN.3/Sub. 1/5, p. 12.

ITALY

Fegiz. P. Luzatto. Studi Statistici Sulle Spese di un Campione di Famiglie Milanese, 1952; DOXA Istituto per le Ricerche Statistiche e l'Analysis dell' Opinione Pubblica Milano, 1953.

215 families. Milan, 1 to 3 months, 1952. Average expenditure for major categories by total expenditure level, family size, occupation; detail by family size for 3 months and for each period studied; detail for electricity by kind of apparatus, size of home.

Family Incomes and Expenditures in Italy; Mutual Security Agency, Special Mission to Italy for Economic Coöperation, Program Division, February 20, 1952.

10,940 families in Italy, surveyed by DOXA, 1948. Expenditures (percent) for major categories, by area, with detail for food by income level. Report also of private survey of 18 wage-earners' families, 7 office employees' families in an industry in northern Italy. Expenditures (percent) for major categories, 1948-1949-1950, separately for wage earners and office employees.

IRELAND

Household Budget Inquiry, 1951-1952, Central Statistical Office, Dublin Stationery Office, 1954. Report not available. Source: Unpublished paper by Jean Mann Due. Postwar Family Expenditure Studies in Western Europe; ILO Year Book, 1954, pp. 296, 301-304.

1946 Study. Report not available. Source: UN Doc. E/CN.3/Sub.1/5, pp. 12, 19-20.

NETHERLANDS

Centraal Bureau Voor de Statistiek, Huishoudrekeningen 1952, Uitgaven Verbuiksrekeningen van Gezinnen van Geschoolde Handarbeiden en

Gezinnen van Middelbare Employes en Ambtenaren, Utrecht: Uitgevermaatschappij W. de Haan, N.V. Report not available. Centraal Bureau Voor de Statistiek, Nationaal budgetonderzoek, 1951, Utrecht: Uitgevermaatschappij W. de Haan, N.V. Report not available. Source of both reports: unpublished paper by Jean Mann Due, Postwar Family Expenditure Studies in Western Europe; and ILO Year Book, 1954, pp. 296-7, 303-4.

Centraal Bureau voor de Statistiek in Samenwerking met de Gemeentelijke Bureau's voor Statistiek van Amsterdam, Rotterdam, 's Gravenhage, Eindhoven en Tilburg, Nationaal budgetonderzoek, 1951.

Serie A, No. 1—Methodologische inleiding (methodological instructions), Utrecht, 1953.

Serie B1, No. 1—Uitgavenrekeningen van handarbeidersgezinnen, onderscheiden naar beroep, woonplaats en gezinsgrootte, Utrecht, 1953.

Detailed expenditures in 1951, all items of manual workers' families, by occupation, place of residence and size of family

No. 3—Uitgavenrekeningen van landarbeidersgezinnen, onderscheiden naar gezinsgrootte en inkomen, Utrecht, 1954. Detailed expenditures in 1951, all items, agricultural workers by family size and income.

No. 4—Uitgavenrekeningen van handarbeidersgezinnen onderscheiden naar inkomen en gezinsgrootte, Utrecht, 1954. Detailed expenditures in 1951, all items of manual workers by income and family size.

Serie B2, No. 1—Uitgavenrekeningen van gezinnen van lagere employe's en

lagere ambtenaren, onderscheiden naar woonplaats en gezinsgrootte.

No. 2—Uitgavenrekeningen van gezinnen van middelbare employe's en middelbare ambtenaren, onderscheiden naar woonplaats en gezinsgrootte.

Serie B3, No. 2—Uitgavenrekeningen van gezinnen van hogere employe's en hogere ambtenaren, onderscheiden naar woonplaats, gezinsgrootte en inkomen, Utrecht, 1954.

Three reports showing detailed expenditures in 1951, all items, of three groups (lower, middle- and upper-salary ranges) of office employees and civil servants, by residence, family size and, for higher paid employees, by income.

Serie B2, No. 3—Uitgavenrekeningen van gezinnen van hoofdarbeiders, onderscheiden naar inkomen en gezinsgrootte, Utrecht, 1954.

No. 4—Gekochte hoeveelheden voeding, gemiddeld per gezin van hoofdarbeiders, onderscheiden naar inkomen en gezinsgrootte. Utrecht, 1955.

Two reports showing detailed expenditures, 1951, all items, and quantities of food bought by professional workers, by income and family size.

Serie B5, No. 1—Uitgavenrekeningen van gezinnen van ondersteunden, onderscheiden naar woonplaats, gezinsgrootte en inkomen. Utrecht, 1954.

Detailed expenditures, 1951, all items, of families on public relief by place of residence, family size and income.

Nationaal budgetonderzoek, Enkele uitkomsten over het eerste kwartaal, 1951, Utrecht, 1952.

COMPARISONS OF PATTERNS OF FAMILY CONSUMPTION

National family expenditure investigation, some results concerning first quarter 1951, summaries for all worker categories listed above.

Centraal Bureau voor de Statistiek, 's Gravenhage, 1946, 1947, 1948, 1949, 1950. Huishoudrekeningen van handen hoofdarbeiders in enkele middelgrote en kleine steden.

A series of 15 quarterly studies of manual and office workers' family expenditures in selected medium-sized and small cities, details for all items, by income group, showing number of households per income group, average income per quarter, with some data also on number of children per family and per income groups, as well as occasional comparisons by class of expenditures with earlier years (1935-1936, 1942-1943-1944). Surveys are quarterly, running continuously from January 5-April 5, 1946. The number of families and range of incomes covered have been increased somewhat since the initial study.

Also reported in: UN Doc. E/CN.3/Sub.1/5, p. 13. Quarterly expenditure studies, 150 to 200 wage and salaried employees in medium sized and small towns, made since January, 1946, of families with no wage-earning children; income limits 30-60 fl. per week, 1946; 40-70 fl. subsequently. Expanded to 250 families, 1948, and 100 agricultural workers added.

Onderzoek naar de Uitgaven van een Aantal Arbeidersgezinnen te 's Gravenhage, 's Gravenhage, No. 1, 1949, pp. 17-26, Mededelingen Van Het Bureau Voor Statistiek en Voorlichting der Gemeente 's Gravenhage.

81 families, The Hague, January-June, 1948. Average weekly expenditure by income level, by family size,

for major categories, and detail for food.

De Uitgaven van 76 Gezinnen van Handarbeiders in de Maanden, Juni, September, December, 1946, en Maart, 1947, Supplement to Maandschrift, Vols. VII-IX (1947), Bureau van Statistiek der Gemeente Amsterdam. Report not available.

NORWAY

Husholdningregnskaper, Høyere Funksjonærer, April 1952-March 1953, Norges Offisielle Statistikk, Series 11, No. 157, Statistisk Sentralbyrå, 1954, 108 pp.

74 salaried employees' families, higher income groups, with 0-4 children in 4 cities, April, 1952. March, 1953. Average expenditures by major category, details by family type and size, by income per consumption unit.

Forbruksundersøkelse 1952 etter Intervjumetoden, Statistisk Sentralbyrå, Norges Offisielle Statistikk, Oslo, XI 131 (1953), 31 pp.

About 200 workers' families of man and wife, with or without children under 16, in Oslo and Bergen. Survey in January-February, 1953 covered 1952 income and expenditures. Average expenditures by major category, by city, family size, and by income per consumption unit.

Husholdningregnskaper, October 1951-September 1952, Norges Offisielle Statistikk, Series 11, No. 128, Statistisk Sentralbyrå, 1953, 125 pp.

100 wage-earner families of man and wife and 0-4 children under 16, in 17 towns, 10 industrial areas. Average expenditure by major category and detail for family types, separately by income per consumption unit.

Husholdningregnskaper, May 1947-April 1948, Norges Offisielle Stat-

istikk, Series 11, No. 23, Statistisk Sentralbyrå, 1950.

452 wage-earner families in 15 towns, 13 industrial areas, and 52 lumbermen and farm laborer families, May, 1947–April, 1948. Couples with 0–4 or more children under 16 years. Average expenditure by income level, family type and size within income groups, for major categories with some detail.

POLAND

1946–1947 Studies. Reports not available. Source: UN Doc. E/CN.3/Sub. 1/5, p. 14. See also Gaspodarka Planowa, No. 20, November 5, 1947, p. 824.

PORTUGAL

1950–1951 Study (Porto). Report not available. Source: ILO Year Book, 1954, pp. 206, 303.

Inquérito ao Custo de Vida na Cidade de Lisboa, 1948–49. Instituto Nacional de Estatística, Lisbon, Estudos, No. 23, 1953, 112 pp.

2339 families (10,442 persons) of 3 or more, members of labor organizations, or public functionaries; July, 1948 to June, 1949. Expenditure for major categories by family size within income group; detail for each category. Monthly expenditures per family by income level. Total expenditure by family size and income level, per family, individual, consumption unit. Greater detail in appendix.

SAAR

1951 Study. Report not available. Source: ILO Year Book, 1951–1952, pp. 263, 272.

SWEDEN

Wiberg, Elisabeth, Några Viktigare Resultat Från Socialstyrelsens Levnadskostnadsundersökning, 1952, Sociala Meddelanden, No. 1 (1954), pp. 11–12.

573 households, 1952; account-

book records for food, 2 weeks between March, 1953 and February, 1954. Expenditure for major categories for all households, by kind of household, and by family size, by consumption expenditure level within family type; by area (urban; rural; Stockholm, Gothenborg, Malmö).

Levnadskostnaderna i Landsbygds-hushåll år 1951, Sociala Meddelanden, Socialstyrelsen, Stockholm, No. 2 (1953), pp. 84–95.

Rural households, excluding built-up areas with more than 200 residents. Expenditures for major categories by family type; for agricultural and nonagricultural families separately. 454 households, 1951 (early 1952 according to English summary). Levnadskostnaderna på Landsbygden år 1951, Sveriges Officiella Statistik, Priser och Konsumtion, Kungl. Socialstyrelsen, Stockholm, 1955, 103 pp.

454 nonfarm rural households, 296 farm households, detailed expenditures of 1951 income for major categories, by type and size of household. Survey report in: Sociala Meddelanden, period covered February 18, 1952–February 21, 1953. Survey also 1953, Socialstyrelsen, No. 2, Stockholm, pp. 84–95.

1949–1950 Study. Report not available. Source: ILO Year Book, 1949–1950, pp. 302–310.

Utgifter för Kläder och Skor m.m. Enligt Socialstyrelsens Konsumtionsundersökning, 1948, Sociala Meddelanden, No. 1 (1951), pp. 19–26.

Continuation of 1948 study, detail for clothing and shoes, 890 households. Expenditure by family size and type, by income class and family type; by age group and family type separately for men and women in

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each group; detail for clothing by family type and sex; detail for clothing by family size, each member separately, within family size.

Konsumtionsvanorna under år 1945, Sociala Meddelanden, No. 8 (1950), pp. 596-605.

619 families and single persons, 1948; includes workers, supervisory personnel, foremen, technical personnel, artisans, supervisors, managers. Expenditures for major categories by family size and by income class within family type (couple with children, single persons, other households).

Folkpensionärernas Levnadskostnader under år 1948, Sociala Meddelanden, No. 3 (1950), pp. 172-81.

446 households of old age pensioners, 1948. Expenditure for major categories for single persons and couples in country and towns, with detail for food. Detail for 270 households for food expenditures, 7 days in November, 1948; accounts kept.

Konsumtionsvanorna under år 1947, Sociala Meddelanden, 1949, Socialstyrelsen, No. 2, pp. 100-106.

347 families and single persons, 1947. Expenditures for major categories by social class (i.e., workers, supervisory personnel, foremen, artisans, technical personnel, supervisors, managers and others). Families with children, single persons, and mixed households.

SWITZERLAND

Les Budgets Familiaux de la Population Salariée, Année, 1953, La Vie Économique, Vol. 27 (November, 1954), pp. 418-423.

Accounts kept, 1953, by 217 families of wage earners and clerical workers in cities of Zurich and Berne, cantons of Tessin, Geneve, Zurich,

Lucerne, Soleure. Expenditures in percent for major categories by income level for each group by family size. Detail for food.

Les Budgets Familiaux de la Population Salariée, Année, 1952, La Vie Économique, Vol. 26, No. 10 (October, 1953), p. 380-394.

Accounts kept, 1952, by 251 households in cantons of Tessin, Geneve, Lucerne, Soleure, Zurich, cities of Zurich and Berne. Wage earners and clerical workers. Average expenditure for major categories by family size, income, family size within income level for 2 levels of income. Detail for each category.

Les Budgets Familiaux de la Population Salariée, Années 1943-1952, La Vie Économique, Vol. 26, No. 11 (1953), pp. 423-435.

Summary of annual expenditure studies, wage earners and clerical workers, 1946 (261 cases), 1947 (247 cases), 1948 (267 cases), 1949 (518 cases), 1950, 1951, 1952. Expenditure for major categories, each occupation group, detail for food. See Vol. 21, July, 1948, pp. 256-263 for 1946-1947 studies, Bale-Ville, Tessin, Zurich; cities of Berne, Zurich.

Les Budgets Familiaux de la Population Salariée, Année 1951, La Vie Économique, Vol. XXV, No. 9 (September, 1952), pp. 389-402.

Accounts kept by 262 households, 1951, cantons of Geneve, Lucerne, Tessin, Zurich; cities of Berne, Bienne, Zurich. Presented as in 1952 study.

Les Budgets Familiaux de la Population Salariée, Année 1950, La Vie

Économique, Vol. 27 (November, 1951), pp. 445-459.

Cantons of Bale-Ville, Genève, Lucerne, Soleure, Tessin; cities of Berne, Bienne, Zurich. 326 cases. Presented as in 1952 study.

TRIESTE, FREE TERRITORY OF

1952 Study. Report on second sampling survey of living conditions (British-US Zone), July, 1952, 132 pp. and tables.

183 families (628 persons) in Zone "A" of Trieste, 5 occupational groups by income level for major categories; April, 1952. Average expenditure, quantities consumed per consumption unit, each occupational group.

TURKEY

1946-1947 Study. Report not available. Source: UN Doc. E/CN.3/Sub.1/5, p. 15.

YUGOSLOVIA

1953 Study. Source: Statisticki Godisnjak FNRJ, 1954, p. 310.

Accounts kept by 52 worker families, 42 employees in Serbia; 50 workers, 42 employees, Croatia; 48 workers, 17 employees, Slovenia. 4-member families with 1 wage earner, except in Croatia, where families with more than 1 wage earner included. Average monthly expenditure for major categories by occupational group within each area.

Family Budget Enquiry. Report not available. Source: UN Stat. Papers, Series C, No. 4, November 15, 1950.

Survey organized by Federal Statistical Office to obtain data on main groups of items—food, clothing, rent, fuel. Families of workers employed in larger enterprises of important industry branches. For each main industry, regression equations set up for expenditures on various groups of items in relation to income level and family size. Number of sample families not indicated.

CANADA

Canadian Non-Farm Family Expenditures, 1947-1948 (with supplementary food data, 1948-1949), Dominion Bureau Statistical Reference Paper No. 42; Dominion Bureau of Statistics, Ottawa, June, 1953.

Average expenditures, 12 months ending August, 1948, 5 provinces; random sample of 3660 nonfarm families and single spending units for major categories, considerable detail by income level with average number in spending units for each income group; averages for 4 family types separately for major categories and for food, shelter, furnishings, equipment, clothing for 4 family types, by income.

Survey of Family Expenditures, 1947-48, and Expenditure by Size of Household, Dominion Bureau Statistical Reference Papers No. 6 and No. 12; Dominion Bureau of Statistics, Ottawa, 1950.

4200 nonfarm families and single persons; September 1, 1947-August 31, 1948. Average expenditure for all cases and by region, with some detail for each category; average expenditure for major categories for single persons, 2-adult families, medium and large families for Canada with regional breakdown for medium-size families, and by income level.

UNITED STATES

A Guide in Weighing Choices in Family Financial Planning; University of Illinois, Department of Home Economics, Extension Service in Agriculture and Home Economics, Urbana, Illinois, 1954.

Accounts kept by 132 farm families in Illinois. Average expenditure for major categories by levels of cash outlay with some details; average expenditure for all cases for major categories, and by number of years of

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marriage. Average expenditures for major categories in 1954, 5 Illinois town families.

US Department of Agriculture, 1953, *Agricultural Statistics, 1953*, Table 837, "Spending for Family Living: Average Expenditure for Selected Items by Account Keeping Families in 3 States," p. 726.

Annual expenditures for food (per household), clothing, medical care, furniture and equipment (per family) for Illinois, Kansas, southeast Minnesota. Summaries of accounts kept by farm families. Published annually in *Agricultural Statistics*.

Raskin, Nathaniel J., *A Study of the Living Expenses of Blind Persons*; American Federation for the Blind, New York, Research Series No. 4, March, 1955, 44 pp.

65 blind persons in Wichita, Kansas, September, 1951 through August, 1952; compared with Bureau of Labor Statistics sample of 143 consumer units in Wichita, 1950 (preliminary figure). Average expenditure by income level for major categories; average expenditure by 2 income levels for major categories, families with head over 50, and with blind head over 50; average expenditure for major categories for single persons.

Family Income, Expenditures and Savings, 1950, US Bureau of Labor Statistics Bulletin No. 1097 (revised), June, 1953; *Monthly Labor Review*, August and September, 1952.

10,813 families of 2 or more persons in 91 cities, 1950. All occupations, special detail for families of wage earners and clerical workers. Average expenditure for major categories (some detail for clothing,

house-furnishings) for all families, and families of wage earners and clerical workers by cities.

Farm Family Expenditures in Montana; US Department of Agriculture, Agricultural Research Service, November, 1954, 66 pp.

Families and single persons operating farms or ranches with minimum production worth \$150; 506 cases; 1 spring week, 1950, for food, 1949; other items. Average expenditure for major categories by family type. Detail for all categories by income level and family type (0-2 children under 22 years), detail for clothing by age and sex, also electrical household equipment by income level only.

Millican, Richard D., *A Socio-Economic Study of Forty-Five Railway Operating Trainmen's Families* in Eugene, Oregon; University of Oregon, May, 1950 (mimeographed), 25 pp.

45 households of conductors, engineers, firemen, and brakemen. Percentage of annual expenditures by annual income intervals (showing number of families in each interval) reported by major categories. Date of year covered not given.

Millican, Richard D., and Gardner, William H., *A Study of Incomes and Expenditures of 35 Plywood Workers' Families*; University of Oregon, June, 1949 (mimeographed), 20 pp.

35 families (9 percent of plywood workers' families in 1 plant). Annual food expenditure, distribution of families by amount spent for food. Estimated weekly expenditure for 4 food categories. Estimated annual expenditures for major categories: family distribution by amount spent for each category. No date indicated.

FAITH WILLIAMS

Eckard, E. W., Family Expenditures in Little Rock, 1949; University of Arkansas. Report not available.

Family Income and Expenditures. Los Alamos, 1948, Monthly Labor Review (September, 1949). Reprint No. R-1970.

Families of 2 or more persons in Los Alamos, N.M., 1948. Excludes lowest and highest income groups. Average expenditure, all cases, for major categories by income level with detail for food; separately for male and female single consumers. Expenditure by family size within income class; some detail for food.

Family Income, Expenditures, and Savings in 10 Cities, US Bureau of Labor Statistics Bulletin No. 1065, 1952.

Families and single consumers, 1946-49, 10 cities. Average expenditure by income level for major categories with detail.

1946	
Savannah, Ga.	220 cases
Milwaukee, Wis.	230 cases
Scranton, Pa.	202 cases

1947	
Manchester, N.H.	236 cases
Richmond, Va.	196 cases
Washington, D.C.	323 cases

1948	
Denver, Colo.	194 cases
Detroit, Mich.	410 cases
Houston, Tex.	235 cases

1949	
Memphis, Tenn.	600 cases

Pennock, Jean L., Brew, Margaret L., and Tillinghast, Rose C., Farm Family Spending and Saving in Illinois; US Department of Agriculture, Agricultural Research Service, Agriculture

Information Bulletin No. 101, May, 1954, 92 pp.

454 farm operator families and single farm operators, Illinois, 1946. Average expenditure, all cases, for major categories in percentage; average expenditure per person by income level for major categories, and per consumer unit (primary, secondary), by type and income level for major categories; detail for major categories by type of consumer unit, income level within type.

Family Living Expenditures and Income for Farm and City Families in Miami County, Indiana; Purdue University, Agricultural Experiment Station, Lafayette, Indiana, May, 1953.

100 rural, 100 urban families, Miami County, Indiana; income data for 1946. Average expenditure, all cases, for major categories; average expenditures by income level for major categories; expenditure by 2- and 4-person farm and city families for major categories; average value of goods and services consumed, percentage distribution of family expenditures by income level and major categories for all families.

HAWAII

Snyder, E. M., Income and Expenditures of Office Workers Families, Honolulu, 1951; US Bureau of Labor Statistics (mimeographed).

294 families, Honolulu, October, 1949 to September, 1950. Families whose head and chief earner is an office worker. Average expenditure for major categories by income class and family size.

PUERTO RICO

Survey of Incomes and Expenditures of Wage Earners Families in Puerto Rico, 1952; Department of Labor, San Juan, P.R. Complete report not available.

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Island as a whole, 1952. Percentage distribution of expenditures for major categories of consumer goods and services, urban and rural areas, San Juan metropolitan area, and the Island separately, by income level. Details from Survey of Incomes and Expenditures of Wage Earners Families in P.R. in 1952, Preliminary Release No. 4, Puerto Rico Department of Labor, San Juan, P.R., October 28, 1954.

Snyder, E. M., Income and Expenditures of Office Workers Families, San Juan, 1950; U.S. Bureau of Labor Statistics. October, 1953 (mimeographed).

294 families of office workers, November 1, 1949 to October 31, 1950. Average expenditure for major categories by income class and family size.

ARGENTINA

Resultados del Empadronamiento de 3350 Unidades Familiares Indigentes: Investigación Sociográfica Realizada en la Ciudad de Santa Fé, el 14-30 de Junio de 1947; Dirección de Investigaciones, Estadística y Censos de la Provincia de Santa Fé, Argentina. Report not available.

3350 households in Santa Fé out of 5040 requesting registration as indigent families, of which 3686 accepted as falling below minimum income level. Detail in Boletín, Vol. II, No. 10, pp. 83-102, Santa Fé, January 31, 1948. See also Anuario Estadístico, No. 1, 1948, pp. 617-632.

BRAZIL

Aspectos do Padrão-de-Vida de Famílias de Operários Industrialis Comissão Nacional de Bem-Estar Social, Rio de Janeiro. Report not available. 3182 families of industrial workers, 66 urban areas, August, 1952. Average monthly expenditures for major

categories of consumer goods and services. Summary in Anuario Estadístico do Brasil, 1953, Ano XIV, Instituto Brasileiro de Geografia e Estatística, Conselho Nacional de Estatística, Rio de Janeiro, Dezembro de 1953, pp. 332-345.

Pesquisa sobre Habitação Coletiva; (mimeographed, no date). Divisão de Estatística e Documentação Social, Prefeitura Municipal de São Paulo, 50 pp. Report not available. Source: ST/SOA/1, p. 73.

Pesquisa sobre o Padrão de Vida do Comerciante no Distrito Federal, Introduction by Professor Luiz de Aguiar, Costa Pinto (Universidade do Brasil), 1949; Instituto de Economia (Orgão da Fundação Maua), Rio de Janeiro, 239 pp. Report not available. Source: ST/SOA/1.

CHILE

Encuesta sobre Costo de Vida de la Clase Obrera en Santiago, Concepción y Antofagasta; Dirección General de Estadística, Departamento Técnico, Santiago. Report not available.

52 families of wage earners and lower-salaried clerical workers, Santiago; 79 wage earners' families, Concepción; 62 wage earners' families, Antofagasta. Santiago, September-October, 1946; Concepción, December, 1946; Antofagasta, December, 1946-January, 1947. Expenditures by category. For details see Estadística Chilena, Dirección General de Estadística, Vol. XX, No. 7, pp. 255-56, and No. 8, p. 313; Vol. XXI, No. 3-4, pp. 81-82, Santiago, July, August, 1947; March-April 1948.

COLOMBIA

Las Encuestas Familiares en Colombia en 1953; Departamento Admin-

Administrativo Nacional de Estadística, Bogotá. Report not available.

Approximately 2000 families of wage earners and lower salaried clerical workers with at least 1 child. Bogotá, August, 1953; Medellín, Barranquilla, Cali, Bucaramanga, Manizales y Pasto, Oct. 1953. Average expenditures for consumer goods and services. Source: *Procedimientos de Elaboración de los Índices del Costo de la Vida en Colombia, 1953*, preparado para la III Conferencia Inter-Americana de Estadística, Brasil, Junio, 1955, como documento de referencia 3278 Esp. por el Departamento Administrativo Nacional de Estadística, Bogotá, Colombia.

Las Condiciones Económico-Sociales y el Costo de la Vida de la Clase Obrera en la Ciudad de Manizales; Dirección Nacional de Estadística, Contraloría General de la República, Bogotá. Report not available. Source: ST/SOA/1, p. 88.

Rubio, Eduardo Santos, and Salamanca, Rafael Bernal, *Las Condiciones Económico-Sociales y el Costo de la Vida de la Clase Obrera en la Ciudad de Barranquilla, 1948*; Dirección Nacional de Estadística, Contraloría General de la República, Bogotá, 169 pp.

418 urban wage earners' families of 3 to 20 members classified by family size and expenditure per consumption unit, Barranquilla, October, 1946. Average monthly expenditures for major categories and details of consumer goods and services.

De Castro, Alvaro Pineda, *Las Condiciones Económico-Sociales y el Costo de la Vida Obrera en la Ciudad de Bucaramanga, 1946*; Sección de Estudios Especiales de Estadística, Dirección Nacional de Esta-

distica, Bogotá, 179 pp. Report not available. Source: ST/SOA/1, p. 87.

COSTA RICA

Sanches, Rodrigo Bolanos, *Informe Preliminar Sobre la Encuesta de los Gastos de 258 Familias, de la Ciudad de San Jose, Febrero de 1950*; Dirección General d Estadística, San Jose, C.R.

258 urban families of 2 or more, wage earners and lower-salaried clerical workers. San Jose, September, 1948–August, 1949, for clothing, house-furnishings, other items purchased irregularly, and 1 week in September, 1949 for all other goods and services. Average weekly expenditures for major categories, details for consumer goods and services.

Mosiman, Thomas F., and Gillim, Marion H., *Family Expenditures*, San Jose, Costa Rica, 1949, *Monthly Labor Review* (October, 1950), pp. 443–445.

Average weekly expenditures for food and for all consumer goods and services combined and average annual per capita clothing expenditures. 258 urban families of 2 or more, wage earners and lower-salaried clerical workers, classified by income level and percentage distribution of expenditures for major categories, some details for consumer goods and services by income level.

CUBA

Study of Expenditures of Lower-Middle Income Families in Cuba; Labor Statistics Bureau, Cuban Labor Ministry. Report not available.

Approximately 1000 families with annual incomes of 500 to 3000 pesos. 6 provinces, 1954 (exact date unknown). Expenditures for consumer goods and services. Source: *Estadística del Trabajo*, official publication of the Ministerio de Trabajo, Habana, January and February, 1955.

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EL SALVADOR

Encuesta de Costo y Condiciones de Vida Obrera de San Salvador, 1954; Dirección General de Estadística y Censos, San Salvador, 30 pp. Report not available.

300 urban wage-earner families of 3 or more persons. San Salvador, May 25–June 23, 1954. Average expenditures for consumer goods and services. Source: Encuesta de Costo y Condiciones de Vida Obrera de San Salvador, 1954, Primer Informe de Labores de la Comisión de Precios y Costo de Vida, Suplemento al No. 15 del Boletín Estadístico, Julio de 1954, Ministerio de Economía, Dirección General de Estadística y Censos, San Salvador.

Encuesta de Costo y Condiciones de Vida Obrera de El Salvador; Ministerio de Trabajo y Previsión Social. Report not available.

60 urban families of wage earners, San Salvador; 154 families in Zacatecoluca, San Vicente, San Miguel; 34 families in Santa Tecla. San Salvador, June 26–July 9, 1949; Zacatecoluca, San Vicente, San Miguel, February, 1950; Santa Tecla, December, 1950, April, 1951, April, 1952. Average food expenditures. Source: Boletín Estadístico, Vol. II, No. 14 (March–April, 1954), pp. 173–174, Órgano de la Dirección General de Estadística y Censos, San Salvador.

ECUADOR

Saavedra, Efren H., Conceptos Generales de los Procedimientos Usados en la Confección de los Índices de Precios al Consumidor para Familias de las Clases Media y Obrera de Quito, Junio de 1953; Dirección General de Estadística y Censos, Ministerio de Economía, Quito, 37 pp.

100 urban families of 2 or more, wage earners and lower-salaried cler-

ical workers, separately. Quito, year 1950, details for food expenditures for 1 week in November or December, 1950 or January, 1951. Average weekly expenditures for major categories of consumer goods and services; separately for wage and clerical workers.

GUATEMALA

1953 Study. Report not available.

Family expenditures of wage earners and lower-salaried clerical workers in 10 urban areas, May, 1953.

Estudio sobre las Condiciones de Vida de 179 Familias en la Ciudad de Guatemala, Junio de 1948; Dirección General de Estadística, Guatemala, 126 pp.

179 urban families of 2 or more persons, wage earners, government, privately employed clerical workers, together and separately. Guatemala City, August, 1946, clothing expenditures cover January–June, 1946. Average monthly expenditures, certain consumer goods and services; for major categories by income level, family size and expenditure per consumption unit.

HAITI

Comment Vivant nos Classes Moyennes; Enquêtes sur les Budgets de Famille, Département du Travail, Port-au-Prince. Source: Revue du Travail, Vol. 5, No. 5 (May 1, 1955), Département du Travail, République d'Haiti, pp. 116–127.

41 urban moderate-income families, classified by family size. Port-au-Prince, 1953, food expenditures relate to the week Feb. 21–27, 1954. Average monthly expenditures for major categories of consumer goods and services.

Expenditures and Consumption of Low-Income Families; Haitian Insti-

tute of Statistics, Port-au-Prince. Report not available.

60 low-income families, including land-owning farmers, workers in agricultural operations, urban workers, separately and together, classified by family size. St. Marc, Gonaïves, Fort Liberte, Port-de-Paix, Cap-Haitien, 1 week in 1949 or 1950. Average weekly expenditures for major categories of consumer goods and services, details for food and clothing. Analysis based on translation prepared by US Department of State, typed report TC No. 51293, February 13, 1952.

Metraux, Alfred, *Making a Living in the Marbial Valley*, Occasional Papers in Education, UNESCO/ED/OCC/10, Paris, December, 1951.

Annex II, Family Budgets, shows expenditures for food, clothing, sickness, cultivation of land, tobacco, other miscellaneous items for 8 peasant families, 1949. Composition and income reported for each family. Details for 1 family at each income level, ranging from 200 gourdes per year to 1300-1400.

HONDURAS

Bobadilla, J. A., et al., *Indices del Costo de la Vida en las Zonas Rurales de 1925 a Julio de 1954*; Ministerio de Agricultura, Departamento de Estudios de Economia Agricola, Tegucigalpa, Honduras, 5 pp.

400 rural families, 22 districts and municipalities, 1950. Percentage distribution of average expenditures for major categories, details of consumer goods and services.

Tosco, Manuel, *Algunos Resultados Preliminares Sujetos a Revision de una Investigacion Sobre Consumos Familiares en Zonas Urbanas*, Mayo

de 1951; Servicio Informativo de Banco Central y del Banco Nacional de Fomento, Tegucigalpa, D.C., Honduras, 10 pp.

375 urban families of 2 or more, wage earners and lower-salaried clerical workers, separately, classified by income level. Tegucigalpa, San Pedro, Choluteca, January-October, 1950 for clothing, last week in October, 1950 for food, month of October, 1950 for all other goods and services. Average annual expenditures for major categories of consumer goods and services.

NICARAGUA

Encuesta sobre el Costo de la Vida, 1953, La Direccion General de Estadistica y Censos, Managua, Nicaragua, October, 1953. Report not available. Source: *Estadística, Journal of the Inter-American Statistical Institute*, Washington, DC (September, 1954), pp. 538-539.

Approximately 600 families, 5 to 7 members, artisans, industrial workers, small farmers, agricultural workers. Food consumption, per capita income, family income and various other aspects reflecting level of living.

REPUBLIC OF PANAMA

Paro, Pauline B., *Estudio de los Ingresos, Gastos, y Costo de la Vida, Ciudad de Panama, 1952-1953*; Direccion de Estadística y Censo, Contraloria General de la Republic, Ciudad de Panama (informe Inglés traducido por Luisa E. Quesada), Julio de 1954, 99 pp.

449 urban families of 2 or more, all income groups, by income level. Panama City, year 1952, food expenditures relate to 1 week in May, June, or August, 1953. Average annual expenditures for major categories, details for consumer goods and services. For summary of data, see *Monthly Labor Review* (February, 1955), p. 204.

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PERU

Valderrana, Ana, El Regimen de Salarios en Relacion con el Costo de la Vida, Organo de la Escuela de Servicio Social del Peru, Servicio Social, Vol. IV, No. 4 (December, 1946), pp. 144-180. Report not available. Source: ST/SOA/1, p. 160.

VENEZUELA

La Recolección de Datos Para Estudios de Costo de Vida Obrera en la Industria Petrolera de Venezuela; Ministerio del Trabajo, Caracas.

860 families of oil workers employed in 8 oil fields. Maracaibo City, Bachaquero, Cabimas, La Concepción, Lagunas, Mene Grande, San Lorenzo, Tía Juana, August, 1947. For information see Luis B. Ortiz C., in Revista de Fomento, Sección de Publicaciones, Archivo y Bibliografía, Caracas, Vols. IX-X, No. 69, (October-December, 1947), pp. 69-

129. See also Ortiz, Plan de Estudio de Condiciones y Costo de Vida de los Obreros Petroleros de Venezuela. *ibid.*, Vol. IX, No. 66 (January-March, 1947), pp. 51-73.

La Recolección de Datos para Estudios de Costo de Vida Obrera en la Industria Petrolera de Venezuela; Ministerio de Trabajo, Caracas.

214 families of oil workers employed by 2 oil companies. Campo Carrizal (El Junco), Campo Roblecito, El Sombrero, Las Mercedes, July 8-August 6, 1947. For information see Luis B. Ortiz C., Revista de Fomento, Sección de Publicaciones, Archivo y Bibliografía, Vols. IX-X, No. 69 (October-December, 1947), pp. 69-129. See also Ortiz, Plan de Estudio de Condiciones y Costo de Vida de los Obreros Petroleros de Venezuela, *ibid.*, Vol. IX, No. 66 (January-March, 1947), pp. 51-73.

INTERNATIONAL AND INTERTEMPORAL COMPARISONS OF THE STRUCTURE OF CONSUMPTION

Irving Kravis

The purposes in undertaking this study were first, to describe what could be learned from aggregative data about international and intertemporal similarities and differences in the division of total consumption among major categories, and second, to examine the significance of the findings for the role in economic growth of changes in consumption patterns. This proved to be a very large assignment, and the present paper represents an extensive probing of many facets of the problem rather than an intensive study of one or two narrower aspects. In this attempt to stake out the area, generally only tentative conclusions could be reached.¹

The first broad purpose, that of describing international and intertemporal differences in the distribution of consumption among major categories, can hardly be attacked without some preliminary definitional and taxonomic chores.

¹ The author is grateful to Irwin Friend for his helpful comments.

We are concerned here only with "consumption" as the term is generally used in national income accounting, viz., the purchases by households and nonprofit institutions of commodities and services. The definition excludes not only savings and direct taxes, but also government expenditures to provide consumers with education, medical care, and religious services. The omission of these socialized consumption expenditures is dictated by the lack of data; in the few cases where the necessary information is available, such expenditures are taken into account. Socialized consumption should be included in principle both because it is necessary to provide a complete picture of total real consumption and because the socialization of any one component influences the others. When some or all of the cost of the socialized product is met by taxation so that the cost incurred by the consumer qua consumer is reduced, the result will normally be a higher per capita consumption of the socialized product and lower consumption of others than would prevail under com-

COMPARISONS OF THE STRUCTURE OF CONSUMPTION

pletely private consumption.²

The allocation of consumers' expenditures among different types of goods may be affected also by absolute or relative amounts of savings and direct taxes, but neither of these possible influences is investigated.

A study of the structure of consumption implies, as has already been suggested, some classification of consumers' expenditures. Here we are confronted with an embarrassment of riches in concept which fades rather quickly in practice as we approach the data. In principle, at least, there are the following bases for classifying consumers expenditures:

1. *By industry of origin.* This is an industrial classification in which the output of each industry that is sold to consumers without further processing (save for trade and transport services) is estimated at producers' values. The trade and transport margins may be estimated to get market values for the product of each industry, or these margins may be summed to obtain the contribution to consumption of trade and transport as individual industries. This approach is a relatively easy one for national income estimators, and such classifications are often found in national accounts data. Even the broad distinction between products originating in agriculture and those originating in "industry" is of some significance

² If a government enterprise operates on the full-cost pricing principle, it is, of course, treated for most national accounts purposes as a business enterprise and its sales are regarded as consumption expenditures or intermediate product according to the criteria applied to the product of other businesses. In the present terminology, the production of the product concerned is socialized, but not its consumption.

and has been widely used and misused in the study of economic development. Once this and certain other rather obvious divisions are made, however, there is need for a further basis for distinguishing among the various industries in each broad group.

2. *By characteristics of the industries of origin.* Among the characteristics that might be relevant to an understanding of the relations between consumption patterns and economic growth are the capital-product ratio, the scale of the firm and industry, the degree of competition, and the rate of technological progress (if it could be measured). A more complicated but more precise method would take into account the characteristics of each industry that contributed to the market value of each good, rather than those merely of the last in the chain of commodity-producing industries through which the goods passed. In any event, these characteristics or changes in them might be correlated with the changes in per capita real expenditures by consumers on various products.

3. *By physical nature of the product.* The familiar division into durables, non-durables, and services is referred to here. This classification is probably more significant for cyclical movements than for growth problems, and it is too broad to rely upon without any further basis for distinction. Even so, it is worth exploring.

4. *By newness.* This could mean either products that were new in the sense that there were no close substitutes for them prior to their appearance (e.g., the radio) or products that are new in the sense that while they are clearly substitutes for old products their physical composition has changed

so as to provide much better service and/or to make them available at a much lower price (e.g., nylon stockings). Newness in the former sense has sometimes been used to explain rapid historical increases in United States real consumption per capita. Newness in the latter sense, it is subsequently suggested, probably plays a major part in long-run changes in consumption patterns.

5. *By use.* This is the functional division of expenditures into food, clothing, and other categories customarily found in budget studies. In aggregative data, such classifications are available in adequate detail only for countries where the national accounts are well developed.

6. *By essentiality or degree of necessity.* There are at least a half dozen ways of defining a necessity, ranging from the simple designation of food, clothing, and shelter as necessities to the exclusion of all else, to more elaborate if not less arbitrary statistical criteria such as those relying on the coefficient of variation or the intersection of the Engel curve with the Y intercept. Many of these tests require the kinds of data that are available in budget studies rather than in national accounts.

7. *By income elasticity of demand.* This may be used as a criterion of essentiality, but it is mentioned separately because its significance transcends that of the distinction between necessities and luxuries. Income elasticities for particular goods or groups of goods may be computed either from budget studies or from intertemporal or international comparisons, provided that the latter sources contain adequate price deflators for the various goods or groups of goods.³

³ The difficulty in approximating income elasticities in a relatively simple way is

5. *By price elasticity of demand.* Like income elasticity, price elasticity has some bearing on essentiality and is difficult to estimate. Unlike income elasticity, it must be derived from inter-

illustrated by a widely cited study by C. Winston and M. A. Smith, "Income Sensitivity of Consumption Expenditures," *Survey of Current Business* (January, 1950), 17-20. "Income sensitivity" was defined as the net effect on expenditure of changes in disposable income. For each of more than one hundred categories of commodities and services, it was calculated by a multiple correlation of time series data for 1920-1940 in which annual expenditures were taken as the dependent variables. Consumers' expenditures were then classified into those with above-average, average and below-average sensitivity. (Average sensitivity was the range from a 0.7 to a 1.0 percent rise in expenditures associated with a 1.0 percent increase in disposable income.) Annual expenditures in each of the three sensitivity groups were summed for the years 1929-1948. The interesting thing about these figures is that between the terminal dates of the period, which was marked by a rise of 125 percent in disposable income, expenditure on goods with "average" income sensitivity increased more than expenditures on items with "above-average" sensitivity. The ratios of 1948 to 1929 expenditures calculated from the source are as follows:

	Above Average	Average	Below Average
Durables	2.5	3.2	2.4
Nondurables	2.3	3.0	2.3
Services	1.9	2.1	1.6
Total	2.3	2.8	1.8

It is only fair to say that the authors were interested in cyclical fluctuations rather than the problems of long-run change, and that they were careful to qualify their method with respect to (1) the omission of relative prices as a variable and (2) the use of pre-war years as the basis of estimation. However, their results do provide a graphic illustration of the inadequacy of a simple approach to the problem of gauging the effects of income changes on the long-run shifts in pattern of consumption.

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temporal or interspatial comparisons rather than from budget data.

Our list of possible bases for classifying consumption, it may be noted, begins with classificatory criteria based on production characteristics and concludes with criteria that reflect the nature of consumers' responses. It is difficult, for the most part, to argue the merits of the various bases purely on *a priori* grounds; which is the most useful for the study of the problems of growth can be determined only by trying them out. However, if it can be shown that one end of the production-consumption axis is more active than the other in stimulating long-term changes, there will be some reason for narrowing the choice to one part of the list or the other.

A difficulty that is shared by most if not all of the items in our list is that they are themselves variables in the course of economic growth. If we are to use certain values of one of the quantifiable ones, such as income elasticity, as classificatory criteria we will have to determine the point or points in time and space from which the critical values will be drawn. The nonquantitative classifications suffer from this difficulty to a much smaller degree and in a somewhat different manner. Although the categories remain the same, the things that fit in them may change. Under the functional classification, for example, the bicycle would be currently classified as "recreation" as far as the United States is concerned, but in Europe today and perhaps in the United States of yesterday the bicycle would be regarded mainly as a means of transportation.

Partly because there were fewer problems surrounding its use and partly because it is, in one variant or another,

the most familiar classification, the functional grouping was selected as the main vehicle of the comparisons that were made for this paper. The particular version used here is derived from one suggested by the OEEC.⁴ It is largely a regrouping of OEEC classes, though one or two were slightly modified. The details may be found in the Appendix and the classification itself can be seen in Table 2.

Aside from the arrangement of the minor categories into major groups, the chief difference between this classification and the one used by the Department of Commerce lies in the treatment of purchased meals and beverages. The Department of Commerce assigns the whole of such expenditures to "food," while the OEEC assigns only the retail value of the commodities to "food" and the remaining portion of the expenditure to "hotels, restaurants, and cafés," which in turn is considered as a part of "recreation." Other commodities and services that may serve more than one function (e.g., a radio may be regarded as "furniture" or "recreation," and tourist homes, clubs, and hotels as "housing" or "recreation") are frequently the cause of differences between various functional classifications.

For the purposes of the present paper, which is after all a report on only a preliminary survey of a large area of investigation, food was taken as a single category. This could hardly be justified as a long-term procedure in view of the relative importance of food expenditures

⁴ *A Standardised System of National Accounts*, Organisation for European Economic Coöperation, 1952; 58-62. The classification suggested by the United Nations experts is very similar. Cf. *A System of National Accounts and Supporting Tables* (New York: United Nations, 1953), 41-43.

TABLE 1. The Percentage Distribution of Consumers' Expenditures, Selected Categories, Countries, and Years

Approximate Index of Real per capita Consumption			Country	Country, Date	Currency Unit	Total Amount (mil.)	Percentage Distribution of Expenditures						Services Other than Rent				
Line No.	US Level=100	1950 Index (1950=100)					Grand Total	Food, Drink and Tobacco	Personal Care and Adornment	Home Expenses	Transportation and Communication	Recreation, Health, and Education		Misc.	Durables		
In OEEC Study*																	
1	24	geometric means;	Italy	1909	lire	6,567,000	100	57.9	15.9	14.4	9.3	2.5	4.6	2.1	10.2*	2.1	
2	34	1950 com- parison	Germany	1914	D.M.	68,135	100	46.9	13.4	12.1	20.0	6.5	4.4	1.4	14.9*	.3	
3	46		France	1925	frances	6,648,000	100	46.3	36.5	14.6	11.5	16.3	3.8	5.7	3.2	15.5*	1.5
4	56		United Kingdom	1914	£	9,914	100	40.1	26.6	12.9	10.1	21.5	7.9	5.9	2.0	16.8*	2.7
5	100		United States	1909	dollars	200,542	100	29.5	24.4	11.4	9.4	24.2	9.6	12.5	9.7	16.1*	6.3
6	51		United States	1914	dollars	28,814	100	32.8	24.4	14.0	12.3	33.5	19.1	5.1	2.1	8.2	6.4
7	44		Germany	1914	dollars	33,395	100	33.7	25.5	13.2	11.5	32.5	18.4	6.4	3.1	8.2	6.0
8	63		France	1925	dollars	71,750	100	27.8	23.3	14.5	12.5	30.3	15.7	10.6	7.7	9.8	6.9
9	68		United Kingdom	1914	dollars	71,100	100	25.3*	23.3	13.5	11.3	30.6	15.4	9.5	6.5	11.6	9.4
10	72		United States	1909	dollars	67,399	100	29.4	22.7	12.0	10.1	27.3	12.4	10.7	7.8	12.2	8.4
11	100		United States	1914	dollars	104,457 ^b	100	29.4	24.2	11.4	9.5	26.4	10.8	13.1	10.4	12.9	6.8
12	102		United States	1914	dollars	230,651	100	30.4	25.3	10.4	8.6	25.9	11.8	12.9	10.2	12.9	7.5
13	42		Canada	1930	dollars	4,398	100	29.0	23.1	13.5	11.5	28.3	15.7	9.8	5.6	9.8	9.6
14	40		Canada	1937	dollars	3,959	100	28.2	22.5	13.2	11.3	28.0	15.0	11.0	7.1	9.8	9.8
15	60		Canada	1930	dollars	12,319	100	31.1	23.3	13.0	11.0	23.6	11.2	13.2	9.6	9.9	9.2
16	62		Canada	1953	dollars	15,438	100	30.3	22.9	12.4	10.4	25.1	12.6	13.8	10.2	10.2	8.2
17	9		Sweden	1861	krona	649	100	48.1	50.5 ^c	Personal care	15.7	.3	1.2	.1	4.4	5.7	
18	13.5		Sweden	1880	krona	1,049	100	48.0	48.6	and	12.6	1.3	Excl.	2.1	.1	5.4	6.2
19	19		Sweden	1910	krona	1,749	100	43.7	50.0	adornment,	10.7	2.4	trans-	3.4	.5	10.4	7.3
20	24		Sweden	1910	krona	2,565	100	43.0	49.4	home expenses,	10.0	3.0	portation	3.8	.7	12.4	8.4
21	25		Sweden	1913	krona	2,935	100	42.8	49.2	and	9.7	3.2	equi-	4.0	.8	11.9	9.2
22	28		Sweden	1923	krona	5,799	100	37.1	51.5	transportation	11.2	5.4	ment	5.4	1.4	13.0	12.5
23	35		Sweden	1930	krona	7,694	100	32.9	59.5	equipment	11.2	5.4		5.8	1.5	14.8	13.4
24	46		Sweden	1938-39	krona	8,468	100	37.9	32.1	16.9	12.8	25.4	12.0	8.6	3.3	8.7	2.4
25	54		Sweden	1950	krona	19,611	100	38.3	31.4	19.5	15.2	21.0	8.6	9.5	3.8	9.5	2.2
26	56		Sweden	1953	krona	25,350	100	39.6	32.5	17.3	13.2	20.5	8.2	10.3	4.8	9.8	2.5
27	35		United Kingdom	1900	£	1,656	100	45.5	11.6	9.2	26.3	10.3	5.3	1.4	8.2	3.1	21.1
28	35		United Kingdom	1910	£	1,902	100	44.0	33.5	11.8	9.4	26.3	11.2	5.7	1.4	8.7	3.4
29	37		United Kingdom	1913	£	2,095	100	43.8	33.6	12.6	10.0	25.8	10.5	5.9	1.6	8.5	3.3
30	50		United Kingdom	1938	£	4,335	100	41.1	30.4	10.4		11.0	7.4	2.9			5.9
31	53		United Kingdom	1950	£	9,722*	100	42.7	27.3	14.2	10.4	21.6	8.1	6.2	2.1	12.6 ^c	2.7
32	47		Denmark: 1949	1949	krona	14,290	100	38.6	29.1	15.3	12.8	23.1	6.2	6.1	1.5	11.4	2.5

Approximate Index of Real per capita Consumption Within-Country			Country, Date	Currency Unit	Total Amount (mils.)	Grand Total		Food, Drink and Tobacco		Personal Care Adornment Clothing		Home Expenses		Transportation and Communication		Recreation, Health, and Education		Durables	Services Other than Rent
Line No.	US 1950 Level = 100	Index (1950 = 100)				Total	Food	Total Footwear	Total	Total	Operated	Misc	Total	Rent					
In OEEC Study ^a																			
Norway																			
33	20	51	1910	krone	1,138	100	41.3			11.9	23.3	10.1							
34	29	73	1930		3,163	100	37.5	31.3	14.5	12.4	25.8	12.4	4.9	1.2	11.3	6.0	8.1	19.7	
35	33	82	1938		3,973	100	36.9	30.9	14.3	11.9	25.9	11.4	5.8	2.2	11.6	5.5	10.4	18.8	
36	40	100	1950		10,755	100	35.2	27.3	19.4	16.7	20.2	5.1	6.3	1.6	12.1	6.8	11.3	17.6	
Netherlands																			
37			1923	guilder	4,579	100	45.1	38.8	10.9	10.2	28.8	7.0	3.0						
38			1930		5,182	100	41.8	35.4	11.8	11.0	30.5	9.2	3.4	1.1	8.4	4.1			
39			1938		4,400	100	41.9	36.6	10.6	9.7	30.6	11.3	3.6	2.1	9.8	3.6			
40	35		1950		12,656	100	40.7	34.7	18.8	17.0	23.6	5.2	4.9	1.5	8.9	3.3			
Ireland																			
41	25	84	1948	£	142	100	48.7	34.5		10.8		8.4							
42	30	100	1950		328	100	45.3	33.1	14.6	4.3									
43	30	100	1953		384	100	47.4	33.3	13.3	3.9									
44	27		Israel: 1950	£ I	305	100	43.6		12.8			3.9							
Germany																			
45			1936	D.M.		100													
46			1938			100													
47			1950			100													
48			1953			100													
Puerto Rico																			
49	22		1950	dollars	687	100	46.0		13.2	11.7	20.6	7.0	7.6		7.1	5.6			
50			1953		928	100	47.6		12.3	11.2	19.1	5.6	8.2		7.1	5.6			
Japan																			
51	9.5	137	1930	yen	10.6	100	38.8		10.5	15.5									
52	9	132	1937		12.8	100	41.8		9.6	15.5									
53	7	100	1950	billions	2,443.2	100	61.9	50.8	8.3	10.1									
54	9.5	138	1953		4,415.1	100	55.6		10.4	11.3									
Egypt																			
55			1938	£ E	142	100	71.8	62.6	7.4	8.3	2.5				4.1 (Excl. health)				
56	7		1950		650	100	61.2	54.2	15.6	5.4									

Sources: See Appendix tables and notes.

^a Health and education include both private and public expenditures. Unless otherwise indicated entries for recreation, health, and education include private expenditures only.

^b 1950 the date of reference.

^c Excludes alcoholic beverages.

^d Differs from entry in line 5 (owing to exclusion of public health and education and to fact that it is based on a later Department of Commerce estimate^e).

^e Differs from entry in line 4 (owing to exclusion of public education and to fact that it is based on a later Central Statistical Office estimate).

^f Includes public health, which accounts for nearly 90 percent of total health and for 4.7 of the 12.6 entry.

and of the likelihood that there are important changes in the composition of food expenditures in the course of economic growth. However, the task of getting comparable classifications of foods appeared almost as formidable as that of performing the analogous task for nonfoods. Both could not be undertaken, and the latter seemed of broader interest.

THE COVERAGE OF THE STUDY

The temporal and spatial dimensions of our survey of the functional distribution of consumers expenditures may be judged from Table 1. The figures in this table cover only the more important categories of expenditure and relate to only a few years. They are drawn from the more complete information contained in a series of tables that will be found in the Appendix. While the number and size of these tables make it convenient to separate them from the main body of the paper, many of the figures subsequently analyzed will be taken from these tables rather than from Table 1. The Appendix also indicates the sources of the data for each country and specifies the particulars in which the figures are not strictly comparable.

Some attempt was made to obtain information for as many developed countries as possible, but at least a few for which adequate data are available, including some big ones, escaped our net. The list of fifteen countries contains a limited number that are usually classed as underdeveloped, but no special effort was made to canvass the availability of data for this group of nations.

For each country, the earliest year for which information was available was in-

cluded. So too was a year immediately preceding World War II (1937 or 1938; and two postwar years (1950 and 1953)). The other years chosen generally included the zero years of the decade and sometimes years that were marked by cyclical peaks and troughs, although war years were usually avoided. Some thought was given to the desirability of averaging pairs of years or longer periods in order to mitigate the influence of cyclical factors in a study of long-term changes. Experimentation with data for the United States, United Kingdom, and Sweden, however, led to the conclusion that if war years were avoided, the year-to-year variation in the percentage distribution of consumers' expenditures among the functional categories employed in this study was too small to influence the results. (This was not true of the durables-nondurable-service classification.) A sufficient number of years is included in the Appendix tables for the three countries mentioned to enable the reader to make his own judgment on this point. Altogether there are more than fifty different observations for the fifteen countries in our sample.

To facilitate the analysis, it was desirable to have some basis, however crude, for determining the relative standings with respect to per capita real income or consumption of various points in time and space referred to in Table 1. The intertemporal comparisons within each country were generally made with the aid of deflated consumption figures that were found in the sources cited in the Appendix, and were then adjusted for changes in population. The year 1950 was taken as the base for the "within-country" (intertemporal) comparisons wherever possible, and in

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principle, the 1950 per capita consumption level in the United States as the base for the general comparisons of all points in time and space. The idea was to find a means of expressing each country's 1950 real per capita consumption as a percentage of that of the United States in the same year and to extrapolate this percentage by the intertemporal indexes, so that for each country we would have for each year the real per capita consumption expressed as a percentage of the United States per capita for 1950.

For the four European countries included in the Gilbert-Kravis study⁵ (United Kingdom, France, Germany, and Italy), the 1950 bridge to the United States was ready-made. In that study, the per capita consumption of each country is expressed as a percentage of that of the United States first with United States prices used as weights and secondly with its own prices used as weights. The geometric mean of these two percentages was taken and entered in the first column of Table 1 as the 1950 link to the United States.

A much cruder device had to be employed for the other countries. The ratio of the 1949 per capita income of each country to that of the United States, as estimated from the international income comparison of the United Nations,⁶ was taken as a rough approximation of the ratio of the 1950 per capita consumption to that of the United States. It should be understood that the

numbers are offered primarily to establish the rankings and to provide a rough indication of the magnitude of the difference. Small differences cannot be regarded as significant.

Aside from the limitations imposed on the analysis of the data by the method of obtaining relative real per capita consumption levels, there is a further disadvantage that the observations of very high real per capita consumption positions are limited in number. No other country had a per capita consumption above 75 percent of the United States 1950 level and only three were above the 50 percent mark. The question must always be with us, therefore, as to whether the results at the upper end of the distribution reflect the effects of high levels of per capita income and consumption, or merely the national idiosyncrasies in the consumption patterns of the few countries involved.

The sample thins rather quickly at the lower extreme also when the analysis begins because, as can be noted from Table 1, the data for the lowest-income countries are incomplete. When the Appendix tables are consulted, it will be found that figures for all the six major sectors and twenty-one groups in our classification are available only for Italy, the countries of northwestern Europe (including France), and the United States and Canada. Most of the detailed analysis that follows is, therefore, based on the countries that were in the van of world economic development.

Some idea of the very great range of variation in spending patterns may be obtained from Table 2, which shows the upper and lower limits for each sector and category in our classification.

⁵ *An International Comparison of National Products and the Purchasing Power of Currencies* (Organisation for European Economic Coöperation, Paris, 1954).

⁶ *National and Per Capita Incomes of Seventy Countries Expressed in United States Dollars*, Statistical Papers, Series E, No. 1 (October, 1950).

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TABLE 2. Upper and Lower Limits in the Percentages of Expenditures Devoted to Various Categories as Observed in Fifteen Countries, Various Dates

Expenditure	Lower Limit Percent Country, Date	Upper Limit Percent Country, Date
Food, drink, and tobacco	25.3 United States, 1930	71.8 Egypt, 1938
Food	22.5 { United States, 1929 Canada, 1937	62.6 Egypt, 1938
Alcoholic beverages	.4 Egypt, 1938	11.3 United Kingdom, 1900
Tobacco	1.4 Norway, 1910	8.8 Egypt, 1938
Personal Care and adornment	10.4 United States, 1953	19.4 Norway, 1950
Clothing	7.4 Egypt, 1938	17.0 Netherlands, 1950
Other personal effects	.5 United States, 1937-38	2.4 United Kingdom, 1950
Personal care	.3 Norway, 1910	2.8 Sweden, 1938-39
Home Expenses	9.3 Italy, 1950	33.5 United States, 1909
Rent	2.5 Italy, 1950	19.1 United States, 1909
Fuel, light, and water	2.9 Italy, 1950	9.2 Sweden, 1861
Household goods	2.1 Italy, 1950	15.4 Sweden, 1920
Domestic services	.4 Canada, 1950	4.7 Sweden, 1861
Household services	.4 Sweden, 1953	3.2 U.K., 1901, 1908
Transportation and communication	.3 Sweden, 1861	13.8 Canada, 1953
User-operated transport	.3 Norway, 1910	10.4 United States, 1950
Public transport	.2 Sweden, 1861	4.8 Sweden, 1950
Communications	.1 Sweden, 1861	1.4 Canada, 1937
Recreation, health, and education	1.2 Sweden, 1861	16.8 United Kingdom, 1950
Recreation	.9 Sweden, 1861	10.5 Denmark, 1949
Hotels and restaurants	.3 Sweden, 1861	5.3 France, 1950
Reading materials	.5 Sweden, 1861	5.1 Denmark, 1949
Health	.3 Sweden, 1861	5.4 United States, 1950
Education	.1 Sweden, 1861	3.3 Italy and Germany, 1950
Miscellaneous	.1 Sweden, 1861	9.8 Canada, 1937
Consumer expenditures abroad	.1 United States 1919	3.8 Norway, 1950
Other	.3 Germany, 1950	9.1 United States, 1929

SOURCES: See Appendix.

If our sample had greater coverage in time and space, the spread between the limits would doubtless be even larger. However, spreads of 200 or 300 percent even in major categories such as food or clothing are sufficient to call for explanation. The balance of this paper is given over to an exploration of the

following possible explanatory factors: (1) differences in real per capita income or consumption, (2) relative prices, (3) geographical propinquity, and (4) historical time. First, the behavior of individual groups is examined, and then comparisons of the expenditure distribution as a whole are made.

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THE BEHAVIOR OF INDIVIDUAL CATEGORIES

In this section will be considered (1) the behavior of the percentages of expenditure accounted for by individual categories, particularly with respect to changes in real per capita income or consumption; (2) the composition (in terms of types of commodities and services) of the increment in consumption when a higher-income position is compared with a lower one; and (3) the effects of price structure on the composition of consumption.

THE EFFECT OF THE LEVEL OF CONSUMPTION UPON THE PATTERN OF CONSUMPTION

Ideally, we should attempt to analyze the effect of differences in real per capita disposable income upon consumption patterns. However, owing to some of the theoretical problems connected with the deflation of savings, intertemporal and international comparisons are likely to offer as the best approximations to disposable income a choice between gross product and consumption. We have chosen the latter, but the available data are such that, had we tried to use gross product or even national income, most of the approximations of the relative standings of various countries and times would be unaltered.

In view of the wide margins of error in our approximations of the differences in real per capita consumption, we can expect that only the larger changes in consumption patterns that accompany rises in real per capita income or consumption will be discernible in our data. The intertemporal and interspatial data

we have give clear-cut support only to the following generalizations:

1. The percentages spent for food, alcoholic beverages, and tobacco tend to decline as per capita consumption rises. At high per capita consumption levels the decline tends to level off.
2. This behavior in the food, drink, and tobacco ratio is due to food. Alcoholic beverage and tobacco expenditures do not appear to be correlated with the size of per capita consumption.
3. Of the other major sectors, only transportation and communication yield a clear pattern, increasing markedly as per capita consumption rises.
4. This behavior appears to be the net effect of different movements in the components. User-operated transport and communications conform to the pattern of the sector, or rather, they establish the pattern.
5. Public transport behaves differently. At first the percentage spent rises with per capita consumption, but at higher levels of consumption it may decline.
6. The only other category for which a fairly unequivocal connection with the level of per capita consumption could be established was domestic service. The percentage of expenditures devoted to domestic service declines as per capita consumption rises.

The categories mentioned in this summary are the only ones that varied with rising consumption levels in a consistent way both in intertemporal and interspatial comparisons. Others, particularly household goods and recreation, health, and education were associated with intertemporal but not interspatial

consumption differences. At least one category, rent, was positively correlated with place-to-place increases in per capita income, but tended to be negatively correlated with time-to-time increases.

We can not pretend to be able to explain these findings or even to assert that they would all be confirmed by a more extensive sample and a more accurate ranking of the countries with respect to real per capita income or consumption, but the following observations are relevant:

1. We can, of course, be more certain that it is the effect of differences in real per capita income or consumption when the observed relationship is found both in intertemporal and in international comparisons. Even in these instances, however, it may be that both the rise in the given ratio and the increase in per capita income or consumption are attributable to common factors rather than the former to the latter.

2. The effect of income differences cannot be considered confined to the categories mentioned above. In addition to the deficiencies of our data, we must take account of the possibility that such effects are present but obscured by other variables.

3. On the other hand, different nations may make different choices with respect to the uses to which increments in real income are put. To the extent that this happens, we would not expect to find any relationships between changes in consumption patterns and income. Generally, however, we make the assumption of constant tastes. In a complete analysis, the differences that could not be attributed to income, price, or other variables could be regarded as the effects of differences in taste.

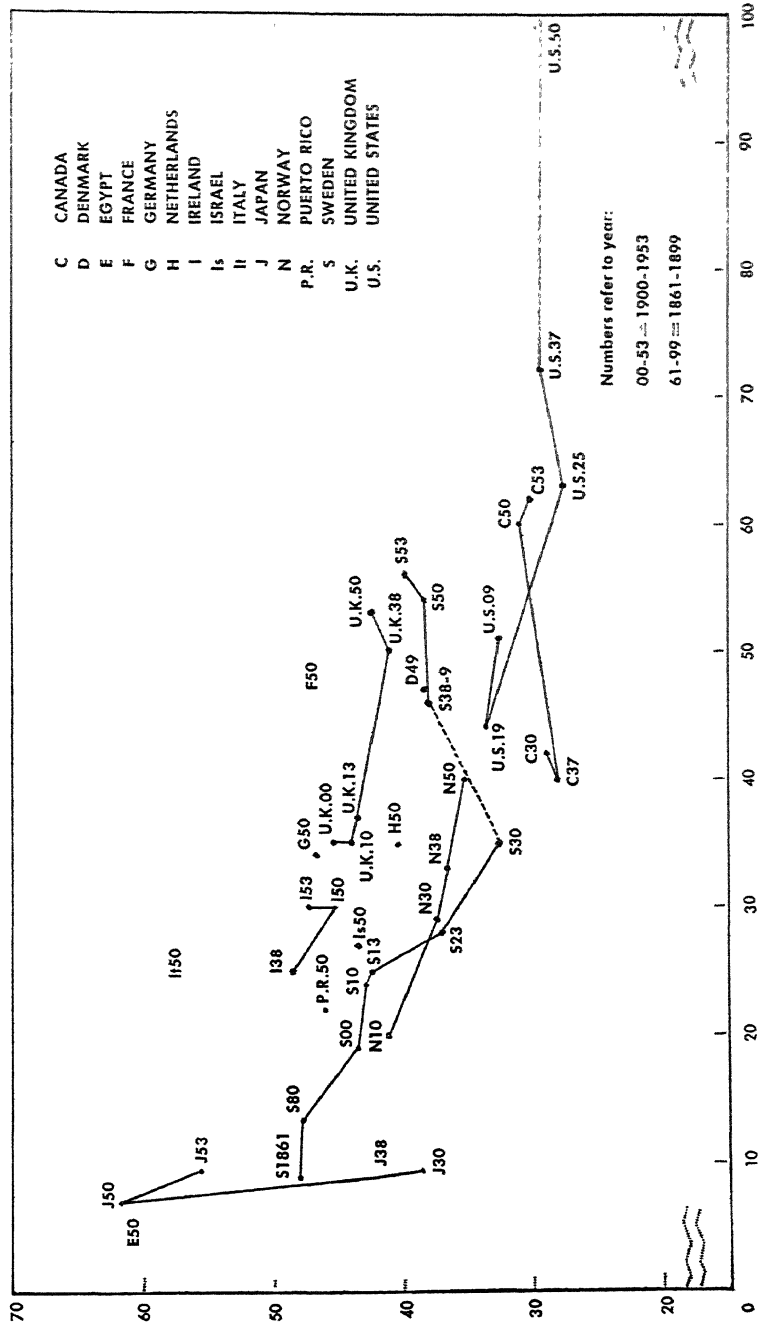
4. In the case of a group that has a consistent association with consumption intertemporally in several or many nations but not internationally, the changes in relative importance must be attributable to secular changes affecting all the countries. The influence of these changes on consumption patterns, however, may not operate primarily through changes in real per capita income or consumption levels. An example would be the effect of long-run changes in relative prices upon consumption patterns. Rising prices for categories with inelastic demands and falling prices for those with elastic demands may raise the share of expenditure, other things being equal.

In the discussion that follows, the behavior of the more important categories as income or consumption changes intertemporally and interspatially is explained in more detail.

FOOD, DRINK, AND TOBACCO

In all countries except those at the upper extreme (the United States and Canada), food, drink, and tobacco have accounted for a larger proportion of consumers' expenditure than any of the other sectors. The proportion, which ranged from 25 to 72 percent, shows a marked tendency to decline as real per capita consumption rises, but the progression is far from orderly. As may be seen from Chart A, the proportion often varies by 10 percentage points or more for pairs of observations that are in the same general range of real per capita consumption. Indeed, for one pair relating to a single country, Japan, there is almost a 17-point spread between the 1930 and 1953 percentages (38.8 against 55.6), even though, if

Food, drink
and tobacco
as % of
con. exp.



U.S. 53

CHART A. Real Per Capita Consumption as Percentage of United States 1950 Level.

the official figures are to be relied upon, per capita real consumption in the two years was virtually the same. However, there appears to be little room for doubt about the downward trend, at least between the range of 5 and 65 percent of the 1950 level of per capita consumption in the United States. If the observations are arrayed in order of ascending real per capita consumption, the quartile distribution is as follows:

after 1930 is questionable) and tend to be confined to comparisons between recent years and those immediately preceding World War II, and, more infrequently, between 1950 and 1953. It is the reversal of the downward trend in the United States that does much to give the scatter diagram the leveling-off appearance that is noticeable on the right-hand portion of the chart. In the same way, the limited number of ob-

Quartile	Number of Observations	Number of Countries	Index of Real per capita Consumption Level (US 1950=100)		Food, Drink, and Tobacco Expenditures as Percentage of Total Consumption	
			Range	Median	Range	Median
1	9	6	7-25	9.5	39-62	49
2	9	6	27-35	33	37-50	44
3	9	6	37-51	44	28-48	35
4	10	4	53-102	62.5	28-43	30

The inverse movements of real per capita consumption levels and the proportion of expenditures accounted for by food, drink, and tobacco can be noticed also in the long-run data for the United States (1909-1929), Sweden (1861-1930), United Kingdom (1900-1913 and between 1913 and 1938), and Norway (1910-1950). The relationship also emerges very clearly when the countries are arrayed according to their per capita consumption levels as of a single year, whether 1937 or 1950.

Some opposite association, that is, an increase in real per capita consumption accompanied by a rise in the proportion of expenditure devoted to food, drink, and tobacco, is also to be found in the data. However, such movements are slight (except for Sweden, where the comparability of the data before and

observations on the extreme left give the impression of more rapid diminution in the ratio between consumption levels of 5 and 25 percent than in higher ranges. The extremes of the chart would thus do much to impart curvature to a regression of the ratio against real per capita consumption, were our per capita measures sufficiently reliable to justify the computation of one.

FOOD

Many of the points that have been made about food, beverages, and tobacco apply to food alone. The food ratio, which varies between 22 and 63 percent for the times and places included in our sample, also shows a clear tendency to decline with rising real per capita consumption. The matter may be summarized as follows:

Quartile	Number of Observations	Number of Countries	Index of Real per capita Consumption Level (US 1950=100)		Food Expenditure as Percentage of Total Consumption	
			Range	Median	Range	Median
1	7	5	7-30	25	31-54	34.5
2	8	5	33-40	35	22-40	23
3	8	6	42-54	48.5	23-38	33
4	8	3	56-102	65.5	23-33	29

COMPARISONS OF THE STRUCTURE OF CONSUMPTION

As in the case of the broader grouping, the fall in the food ratio shows up clearly also in the figures of the countries for which long-term records are available: United States (at least between 1869-1878 and 1919-1925), the United Kingdom, and Norway. Furthermore, the scatter diagram for food, not presented here for considerations of space, looks very much like that for food, drink, and tobacco. The extreme values give the impression of curvature.

ALCOHOLIC BEVERAGES AND TOBACCO

Unlike food, drink, and tobacco, however, the food category taken by itself shows little tendency to rise except in the United States. This means, of course, that the recent increases in the broader grouping must be attributable to a rise in the relative importance of spending for drink and tobacco. In Canada, Sweden, the United Kingdom, and one or two other countries this is indeed the case. It is not known to what extent these changes reflect an easing of sumptuary taxes and other governmental measures that have restricted the consumption of these goods.

The quartile distribution for alcoholic beverages and tobacco is as follows:

consumption levels and the drink and tobacco ratios is a tenuous one if it exists at all. Of the countries in the high-consumption group, the United States is joined by Canada and Sweden in devoting minimal proportions of expenditure (4-8 percent) to drink and tobacco. However, the United Kingdom, with the highest per capita consumption of any country after these three, has been at the other extreme with ratios of 10 to more than 15 percent. The United Kingdom expenditure on drink and tobacco apparently has been consistently high over the past half century but the great expansion in the use of tobacco in the last two decades has brought the figure to a record level. Even if an allowance of 1 or 2 percent is made because the United Kingdom figures include the value of the services performed by restaurants and cafés while most of the others do not, the only countries that devote more than 10 percent of their expenditure to drink and tobacco are Italy and Ireland, both with much lower levels of per capita consumption.

HOME EXPENSES

Expenditures for rents, fuel, light and water, household goods, domestic services, and household services (mainly

Quartile	Number of Observations	Number of Countries	Index of Real per capita Consumption Level (US 1950=100)		Alcoholic Beverages and Tobacco as Percentage of Total Consumption	
			Range	Median	Range	Median
1	7	5	7-30	25	6-14	11
2	8	5	33-40	35	6-13	9
3	8	6	42-54	48.5	6-15	9
4	7	3	56-102	63	4-8	7

The great similarity in the ranges for the drink and tobacco ratios in the first three quartiles suggests that the relationship between real per capita

cleaning and repair services for clothing, shoes, and durables) accounted for 9 to 34 percent of consumers' expenditures in the various situations in our sample.

Much of the variability of these percentages is explained by the wide differences in the rent ratio, which ranges from 2.5 to 19 percent.

RENTS

Rents present a particularly complex problem in international comparisons. First, the relationships that might otherwise prevail have been distorted by rent controls. This probably accounts for the fact that the rent ratio in some European countries in 1950 and 1953 was less than half that of 1937 or 1938. Secondly, the elements of judgment in estimating imputed rents are greater than for other important categories of consumer spending and may have been exercised with different effects by various national income estimators.⁷

The rationale of the relationships between the rent ratios at various places is also extraordinarily complicated. The varying elaborateness of the degrees of protection required by climatic factors, the great differences in the normal life spans of dwelling units, and the impact of population densities upon the relative prices of ground and buildings are among the factors to be considered.

Whether for these reasons or others, a consistent relationship between the rent ratio and per capita consumption is not found in the intertemporal and interspatial data. It is true that for the fourteen countries for which 1950 estimates of rent are included in Table 1 there is a marked tendency for the rent ratio to rise with real per capita

consumption.⁸ An upward trend in the ratio was associated with expanding per capita consumption also in the United States between the decade 1869-1878 and the decade 1904-1913. On the other hand, even if the postwar rent-controlled situations in western Europe are ignored, the time series data more often than not show a downward tendency in the relative importance of rent. This can be seen in the figures for the United States since 1909, Canada for 1930 to 1950, and Sweden from 1861 to the early 1920's, all periods characterized by rapid growth in real per capita consumption.

HOME EXPENSES OTHER THAN RENTS

If rent is excluded from the home expense sector, the remaining items fall within a remarkably narrow range. Of twenty-seven observations for eleven different countries, all but three are between 12 and 16 percent. The combination of these categories as a whole does not appear to be correlated with consumption levels. The same is true of fuel, light, and water and, less certainly, of household services.

However, domestic services, one of the smaller components of this grouping does tend to decline in relative importance as consumption rises. If the twenty-nine observations for which the domestic services ratio is available are arrayed by consumption level and divided into thirds, the results are as follows:

⁸ Based on rank correlation which yielded a value of rho of 0.64 (significant at the 5 percent level). For 1937-1938, rho was 0.68, but owing to the small number of countries (seven) it was not significant.

⁷ For the United States, for example, the ratio is 13, 15, or 19, for the 1909-1914 period, depending on whether the estimate of Lough, Kuznets, or Dewhurst is used.

COMPARISONS OF THE STRUCTURE OF CONSUMPTION

Number of Observations	Number of Countries	Index of Real per capita Consumption Level (US 1950=100)		Domestic Services as Percentage of Total Expenditure	
		Range	Median	Range	Median
10	6	24-35	31.5	1.2-3.8	2.0
10	6	37-53	45	0.9-3.6	1.9
9	3	54-102	63	0.4-2.1	1.3

While this relationship is confirmed both by intertemporal comparisons for at least a half-dozen countries and by interspatial comparisons as of 1950 and 1937-1938, it is interesting to note that the temporal decline in the ratio has persisted even in the few instances where our data include interruptions in the upswing of per capita consumption (e.g., between 1909 and 1914 in the United States and between 1950 and 1953 in Ireland).

HOUSEHOLD GOODS

The share of household goods in consumer spending has risen during the past half-century in all three of the countries for which information is available (the United States, the United Kingdom, and Norway). In the United States, at least, this ratio has shown wider year-to-year fluctuation than many others, owing, perhaps, to the large admixture of durables.

Among the durables the increasing relative importance of household appliances has pushed the ratio for household goods upward, but perhaps to a lesser degree than our consciousness of the newer contrivances might lead us to expect. In the United States the percentage share of household appliances rose from 0.5 percent in 1909 to 1914 to 1.5 to 2.0 percent in 1950 and 1953. Such products accounted for only about a fifth of all household goods in the latter years. The other types of household goods, including furniture, furnish-

ings, and cleaning and polishing preparations, also increased in relative importance, rising from around 5 percent in 1909 and 1914 to about 7 percent in 1950 and 1953. Much the same story regarding the continued and even the expanding relative importance of the older types of household goods seems to be conveyed by the Norwegian data.

The intertemporal behavior of the household goods ratio is not duplicated interspatially. When the ratio is compared for countries with different levels of real per capita income or consumption, either as of 1937-1938 or 1950, there is no evidence of correlation.

PERSONAL CARE AND ADORNMENT

Expenditures on clothing and footwear, personal effects (jewelry, watches, luggage, etc.), and personal care (toilet articles and barber and beauty shop services) ranged from 10 to 19 per cent.⁹ Neither the sector as a whole nor any of the three categories was correlated with interspatial differences in real per capita consumption. In the United States, however, there has been a substantial decline in the ratio for cloth-

⁹ The international comparability of the categories in this sector is less than in all the others except the catchall "other" of the "miscellaneous" sector. Without more detailed information than was generally available, we could not be certain that a consistent division was being made between "clothing and footwear" and "other personal effects."

IRVING KRAVIS

Ter-	Num- ber of Observations	Num- ber of Con- sump- tion Level (US 1950=100)	Percentage of Consumer Expenditure Accounted for by:									
			Index of Real per capita Consumption		Total Transportation and Communication		User-Operated Transport		Public Transport		Communi- cations	
			Range	Median	Range	Median	Range	Median	Range	Median	Range	Median
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	8	5	24-37	34.5	4.7-5.9	5.1	1.2-2.2	1.5	2.4-3.9	3.1	0.2-0.6	0.4
2	9	6	40-53	46	5.1-11.0	6.4	1.5-7.1	2.9	2.2-4.1	2.9	0.4-1.4	0.6
3	9	3	54-102	63	9.3-13.8	10.7	3.6-10.4	7.8	1.5-4.8	2.1	0.6-1.4	1.1

ing and accessories¹⁰ from 19.3 in 1869-1878 to 10.5 percent in 1944-1953. On the other hand, in Sweden between 1861 and 1890 the share of consumption accounted for by the output of the textile, clothing, and leather industries (consisting predominantly of clothing and footwear) rose from 16 to 23 percent. As far as can be judged from the rough income comparisons that can be made, the difference cannot be explained in terms of movements at different ranges of income. Sweden in 1861, it is true, may have had a lower real per capita income than the United States in 1869-1878. However, by 1890 she probably reached this level and by 1900 was well beyond it, but there is little evidence of a secular decline in the clothing ratio.¹¹

¹⁰ Includes all "personal effects" except jewelry and watches.

¹¹ The speculative statements with respect to comparative incomes are based on rather long chains of statistics. The weakest link in the chain, perhaps, involved the use of the UN international income comparison (see footnote 5) to establish a ratio of 0.54 between Swedish and United States per capita income or consumption in 1950. This figure was extrapolated backward to 1913 by estimates of real per capita income made by the Konjunkturinstitutet (cited by I. Svennilson, *Growth and Stagnation in the European Economy*, United Nations, 1954, p. 233) and prior to 1913 by Lindahl, Dahlgren, and Kock estimates of real consumption and population (*op. cit.*, pt. I, p. 302, and pt. II, p. 4). Taking the United

TRANSPORTATION AND COMMUNICATION

Expenditures on transportation and communication are, of course, closely and clearly associated with the whole phenomenon of economic growth as it has occurred in the modern world, and particularly with the urbanization that appears to be inherent in the process. These expenditures, which are negligible in low-income situations (less than 0.5 percent of total consumption) run as high as 13 or 14 percent in the highest-income situations.

In order to show the relationship between real per capita consumption and the proportion of expenditure devoted to this sector, the 27 points in time and space for which data on both variables were available were arrayed in order of increasing per capita consumption. When the distribution was divided into thirds, the results were as shown in the table above.

States 1950 level as a base, the Swedish indices of per capita income or consumption for 1861, 1890, and 1900 are 17, 23, and 35, respectively. For the United States, Department of Commerce figures were extrapolated backward from 1939-1948 by Kuznets' estimates of real per capita consumption (*Income and Wealth of the United States, Trends and Structure*, Bowes and Bowes, 1952, p. 59). United States real consumption per capita in 1869-1878 comes to 22 percent of the 1950 level.

COMPARISONS OF THE STRUCTURE OF CONSUMPTION

The correlation of the sector totals (Columns 6 and 7), user-operated transportation (Columns 8 and 9), and communications (Columns 12 and 13) with per capita consumption levels, seen so strikingly in the above table, is confirmed by both interspatial comparisons for 1950¹² and by long-run changes in the United States, Sweden, and Norway. The automobile alone (i.e., user-operated transport) accounts for an increase that is greater than the rise in the sector as a whole (compare Columns 9 and 7, or 8 and 6). The reason, of course, is the decline in public transport (Column 11).

The figures on public transport invite closer scrutiny. In the successive thirds in the above table the lower limits of the ranges decline while the upper limits rise. When the observations are divided into separate groups for interspatial and intertemporal comparisons, there are mixed findings. In the United States, the public transport ratio has had a noticeable though not uninterrupted downward movement from around 2.5 in 1909 to 1.5 in 1953. In the United Kingdom, the ratios for 1938 and 1950 are within the range observed in 1900-1913. On the other hand, there have been fairly large upward movements in the ratio in Norway and Sweden over long periods. Also, it is reasonable to suppose that sometime before our data pick up the story in the United States and the United Kingdom, the share of public transport service must have risen in view of the total absence of large-scale local public carriers if we go

back far enough. Is it possible, therefore, that the rise in the public transport ratio comes at an early stage in the growth of per capita real consumption and begins to decline when per capita income is high enough to permit large-scale substitution of the automobile for trolleys, buses, and railroads?

Historically, the answer to this question may be complicated by the influence of the relatively late arrival of the automobile, but this should affect international comparisons to a much lesser degree. The figures for 1950, which put our question to test, contain an element of support for an affirmative answer:

Per capita Consumption Index (US=100)	Country	Public Transport Percentage
24	Italy	2.4
34	Germany	2.9
35	Netherlands	2.8
40	Norway	4.1
46	France	2.2
47	Denmark	3.7
53	United Kingdom	3.6
54	Sweden	4.8
60	Canada	2.4
100	United States	1.6

The difficulty is that an affirmative finding rests largely on the inclusion of the United States and Canada. If these two countries were excluded, there would be a fair case for arguing that the public transport ratio tended to rise with increasing per capita real consumption. The question then resolves into whether it is the high incomes of the United States and Canada that account for the extent to which the automobile is used in place of public transport or other factors peculiar to those countries such as lower relative prices for automobiles and motor car supplies and

¹² The coefficient of rank correlation for the sector as a whole and for the communications category was over 0.90; for user-operated transport it was 0.77. (Data were available for 10 countries.)

services or greater distances between population centers.

RECREATION, HEALTH, AND EDUCATION

Expenditures for recreation, health, and education ranged from 1 to 14 percent of private expenditures for consumption. The relative importance of this category would, of course, be larger if public expenditures on education and health were included.

Both in the United States from 1909 to 1953 and in Sweden from 1861 to 1930 and again from 1938-1939 to 1953, the proportion of expenditure devoted to this sector and to all but one or two

for 1950 are tabulated below.¹²

The figures in the column for health suggest that there might be a relationship between the health ratio and consumption levels when both private and socialized consumption are taken into account.

DURABLES, NONDURABLES, AND SERVICES

The five countries for which it was possible to break out the durables from nondurables are shown in Table 3. The changes over four decades in the United States and over five decades in the United Kingdom have been more alike than unlike. In both countries, the most

	Index of Real per capita Consumption Level (US=100)	Percentage of Consumer Expenditure Accounted for by:	
		Health	Education
Italy	24	1.6	3.3
Germany	34	4.2	3.3
France	46	4.6	2.4
United Kingdom	53	5.2	2.9
United States	100	5.4	3.2

of the major components increased. Increases can sometimes be noted also in countries for which data are available only for the past two decades, such as Norway and Canada. There are, of course, exceptions, but the impression that is given is that of an upward secular trend in many countries.

Once again the time-to-time movement is not matched in the place-to-place data. There is no clear explanation for this in the case of recreation, but for health and education the exclusion of public expenditures from the international comparisons may obscure the relationship. Data inclusive of such expenditures, available for five countries

notable changes have been the rise in durables, the fall in rent and domestic services, and the increase in other services.

As between the United States and Canada on the one hand, and the European countries on the other, the main differences are that the North American countries have lower ratios for nondurables (due mainly to food, drink, and tobacco), and higher ratios for durables and rents. No relationships between the ratios and income or consumption are apparent, but this may be due to the small number of countries involved.

¹² See Appendix Table 1.

TABLE 3. The Percentage Distribution of Consumers' Expenditures among Nondurables, Durables and Services, Five Countries

Expenditure	United States				United Kingdom		Sweden	Norway	Canada Average of 1950 and 1953
	1909 and 1914	1950 and 1953	1950		1900	1950	1950	1950	
Nondurables	54.4	51.7	62.0		63.2	63.1	65.0	58.4	
Food, drink, and tobacco	33.2	29.9	43.0*		46.0*	38.5	35.2	30.7	
Clothing and footwear	11.9 ^a	9.0 ^a	10.4		9.3	15.3	16.7	10.7 ^a	
Other	9.3	12.8	8.6		7.9	8.2	13.1	17.0	
Durables	8.6	13.8	8.0		5.3	11.5	11.3	11.6	
Services	37.0	34.4	30.0		31.4	25.4	22.7	30.0	
Rent	18.8	11.3	8.2		10.4	8.7	5.1	11.9	
Other	18.2	22.9	21.8		21.0	16.7	17.6	18.1	
Domestic service	2.3	1.4	0.9		3.7	1.1	1.4	0.4	
Household service	1.6	2.0	2.2		3.1	.4	0.9	1.4	
Transportation and communication ^b	3.9	4.3	4.4		4.2	6.2	4.9	5.0	
Recreation, health, and education ^b	4.0	6.4	9.7 ^c		6.3	4.3 ^r	6.9	8.4	
Personal business service	1.1	4.4	4.6		3.7	4.7	3.5	1.7	
Other	6.1	4.6						1.2	
Total ^d	100.0	100.0	100.0		100.0	100.0	100.0	100.0	

Sources: Appendix Tables 2, 4, and 6.

^a Includes accessories.

^b Service components only.

^c Nearly half of this figure is for socialized medicine.

^d Includes barber and beauty shop services, electricity, gas and water, funeral services, religious and welfare expenditures.

^e Includes service component of alcoholic beverages consumed on-premise.

^r Excludes education.

THE COMPOSITION OF REAL DIFFERENCES IN CONSUMPTION

Consumption patterns thus far have been discussed in terms of the percentage distribution of expenditures. Differences in the percentages between two situations could be due either to price or to quantity variations, and it would be desirable to separate the effect of each. Unfortunately, this requires deflated series for each of our categories, which are available only for Norway between 1910 and 1950 and for the five countries included in the OEEC study as of 1950.¹⁴ This is too small a sample for most purposes, but it is of some interest to analyze the composition in terms of commodities and services of the differences in per capita consumption even for this limited number of situations.

Table 4 shows the categories for which the largest differences in real per capita consumption were observed among the five countries in the OEEC study. The figures are given in terms of United States prices, but the analytical results did not vary significantly when European prices were used.

A major portion, 40 to 60 percent,¹⁵ of the difference in real per capita consumption between the United States on the one hand and the European countries on the other hand is accounted for by clothing, household goods, and user-operated transport.

¹⁴ See Appendix Table 1.

¹⁵ The percentages cited are based on a total that includes some negative entries, owing to the fact that real per capita consumption in Europe was higher than in the United States in a few instances. Fortunately, negative items are few in number and generally small, and they do not seriously affect the figures cited in the text.

These items made up only 20 to 25 percent of consumers' expenditures in the several countries in 1950.

The proportion of the difference accounted for by food rises as the size of the total difference increases (Line 6a versus Line 1). When the food difference is added to those already mentioned, between 55 and 70 percent of the per capita difference in real income is explained.

In the intra-European comparisons, however, the differences in user-operated transport are very small, and those for clothing and household goods are not much larger, if larger at all, than might be expected from the percentages of total consumption that they account for. To the extent that any categories take up a disproportionate share of the total dollar difference in real per capita consumption, housing and recreation are the ones. In the comparisons of the United Kingdom with the other European countries and in the Germany-Italy comparison, these two groups, which account for 8 to 16 percent of consumers' expenditures in the European countries, are responsible for 30 to 50 percent of the difference in real per capita consumption. If public transport is added, 35 to 65 percent of the difference is accounted for. If food is also included, the proportion rises to 65 to 80. The United Kingdom comparisons, like those involving the United States, show a larger share of the difference accounted for by food when comparisons are made with low-income countries than with high-income nations.¹⁶

¹⁶ Recreation, health, and housing are somewhat more important in accounting for the difference in consumption between France and Italy than might be expected from their relative importance in consumers

TABLE 4. The Composition of Real Differences in per capita Consumption; 5 Countries, 1950

Differences in:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	UK	US France (1950 \$ per capita)	Compared with Germany	Italy	-UK France (1950 \$ per capita)	Compared with Germany (1950 \$ per capita)	Italy	Compared with Norway 1950 (1918 kroner per capita)
1. Total consumption	430	596	736	871	166	306	441	790
2. Clothing	66	87	95	106	19	29	-40	94
3. Household goods	82	100	101	122	18	19	-40	75
4. User-operated transportation	109	108	114	115	-1	5	6	19
5. Total, lines 2, 3, 4	257	295	310	343	36	53	86	188
6. Food	48	70	107	151	22	59	103	152
7. Total, lines 5, 6	305	365	417	494	58	112	189	340
8. Housing	16	51	55	76	35	39	60	51
9. Recreation	-14	32	33	60	46	47	74	n.a.
10. Total, lines 8, 9	2	83	88	136	81	86	134	
11. Total, lines 7, 10	307	448	505	530	139	198	323	

Percentage Distribution of Differences in Total Consumption							
1a. Total consumption	100	100	100	100	100	100	100
2a. Clothing	15	15	13	12	11	9	9
3a. Household goods	19	17	14	14	11	6	9
4a. User-operated transportation	25	18	15	13	negligible		
5a. Total, lines 2a, 3a, 4a	59	50	42	39	22	16	19
6a. Food	11	12	15	17	13	19	24
7a. Total, lines 5a, 6a	70	62	57	56	35	35	43
8a. Housing	4	9	7	9	21	13	6
9a. Recreation	-3	5	4	7	28	15	n.a.
10a. Total lines 8a, 9a	1	14	11	16	49	28	
11a. Total, lines 7a, 10a	71	76	68	72	84	63	

Sources: Columns (1) to (7): Derived from Gilbert & Kravis, *op. cit.*, pp. 113-20. Column (8): Derived from Central Bureau of Statistics of Norway, *National Accounts, 1900-1929*, pp. 136-41.

The high proportion of the income difference that is represented by food when low-income situations are involved in a comparison and the marked diminution in the share of food in the difference as the level of income rises is probably significant beyond the confines of this sample. It is more dubious, however, whether the observed movement first into housing and recreation, followed at higher levels by the use of incremental consumption for clothing, household goods, and transport will prove to represent successive stages in a broadly applicable pattern.

In this connection, it is interesting to note that in the only intertemporal comparison at hand, that of Norway from 1910 to 1950, the growth in real per capita consumption appears to be well distributed among the various categories. Household goods, user-operated transport, and public transport are moderate exceptions; these groups, which made up 7 percent of expenditures in 1910 and 14.5 in 1950, were responsible for 23 percent of the increase in real per capita consumption.¹⁷

THE EFFECT OF PRICE STRUCTURE ON CONSUMPTION PATTERNS

The tendency toward inverse correlation of price and quantity ratios referring to two points in time or space has been noted in other studies, but the relative importance of this relation-

expenditures. The main factor affecting the France-Germany comparison is alcoholic beverages, owing to the high French consumption of wine.

¹⁷The Norwegian data do not either confirm or controvert the findings of the United Kingdom comparisons with respect to housing and recreation, because Norwegian data for these categories are not available for 1910; also, the increase in housing was curbed by the war and its aftermath.

ship in explaining differences in consumption patterns remains to be explored.

Preliminary investigations in the present study seemed to indicate that the relationship is more tenuous in the case of foods than for nonfoods. For this reason and because food was in any case treated as a single group, attention was confined to nonfoods. The method employed in each binary comparison consisted of ranking the quantity ratios for the various categories of nonfoods from low to high and the price ratios for the same groups from high to low, and correlating the two sets of ranks. The method could be used, therefore, only where both price and quantity comparisons between two situations were available for an adequate number of categories of consumers' goods. Such information was available intertemporally only for three countries and internationally only for the countries included in the OEEC study. The intertemporal data are available for all post-war years, but the comparisons for present purposes were confined to longer spans of time.

The situations compared and the results obtained are shown in Table 5. All the correlations are significant from a statistical standpoint.

The significance from an economic standpoint is that the results suggest the consumers may be fairly flexible in adapting their spending patterns to relative price structures. Perhaps this sensitivity to price differences exists because so many "new" products are close substitutes for old ones. The list of innovations that are completely new in the sense that no existing good quite met the purpose served by the new good is limited. The phonograph or the radio, air conditioners, and perhaps a

COMPARISONS OF THE STRUCTURE OF CONSUMPTION

TABLE 5. Measures of the Inverse Correlation Between Price and Quantity Ratios in 9 Binary Comparisons

Situations Compared	Number of Categories	Coefficient of Rank Correlation ^a
1. US—UK (1950)	50	0.67
2. US—France (1950)	50	0.69
3. US—Germany (1950)	50	0.63
4. US—Italy (1950)	50	0.73
5. Norway, 1910–1930	20	0.56
6. Norway, 1930–1950	20	0.56
7. Norway, 1910–1950	20	0.68
8. United States, 1935–1952	28 ^b	0.70
9. United Kingdom, 1938–1948	16	0.58

^a The coefficients on Lines 5 and 9 are significant to the 2 percent level; the one on Line 6 to the 1 percent level; and the others to the 0.1 percent level.

^b These 28 categories, all those for which appropriate price indexes could readily be obtained from those prepared by the BLS, accounted for about two thirds of total nonfood consumption expenditures. In all other cases, the categories cover all nonfood expenditures.

few others fall in this category. Economic growth, as far as consumption is concerned, is largely a process of substituting technically superior products for existing ones, partly on the basis of their inherent superiority but also on the basis of price competition. In some instances, like the substitution of the automobile for the horse and buggy, technical superiority was probably the major factor; in others, like the substitution of gas and electricity for coal and wood, price may have been the more important element. In any event, the major impact of the new good is not made until there is a considerable cheapening in prices. This is now so widely appreciated that the time lag for price reductions may be diminishing simply because each major producer of a new contrivance, knowing from experience that a mass market will be achieved with a lower price, tries to be the first to reap the harvest. It would be interesting to study the behavior of, say, television and radio prices for confirmation.

Of course, there is little doubt about

the *direction* of the effects of relative price changes; the question is how *important* they are in accounting for the changes in consumption. The limited evidence available in Table 5 suggests that from one third to one half of the variance in the ranks of the quantity ratios is accounted for by differences in relative prices alone.¹⁸ If this is borne out by further investigations, we have in relative price movements a major mechanism of changes in consumption patterns.¹⁹

SIMILARITIES AND DISSIMILARITIES IN EXPENDITURE DISTRIBUTIONS

In this section we try to measure the degree of difference between various

¹⁸ The percentages were obtained by squaring the lowest and highest rank correlation coefficients.

¹⁹ This and other aspects of our problem will be capable of multivariate analysis, including both income and price effects, when additional countries are brought into the framework of the OEEC comparisons established in the Gilbert-Kravis report. This kind of analysis was not worthwhile on the basis of the four comparisons presently available.

pairs of expenditure distributions and to explore the factors that account for the differences between distributions that refer to various points of time and space.

For this purpose we have used for each pair of distributions the sum of the differences between the percentages for each of nineteen categories of expenditures in our classification.²⁰ This total has little meaning in itself, but it can be used as an indicator of the relative degree of similarity or dissimilarity as between different pairs of situations. For convenience, we will refer to it as an "index of similarity," it being understood that low values indicate greater similarity than high ones. While the absolute magnitude of the index is sensitive to the number of categories used in its computations, preliminary experimentation seems to suggest that it is reliable as an indicator of relative degrees of similarity or dissimilarity,²¹ at least as long as food is treated as a single category.

Related measures, including the sum of the squared differences between two sets of percentages and the sum of relative squared differences (i.e., each

²⁰ Personal care and adornment was treated as a single category, owing to the variation in the breakdowns for this sector in our data for different countries. Aside from this, percentages representing totals were avoided. If these two points are borne in mind, the identity of the nineteen categories can be readily determined from any of the larger Appendix tables.

²¹ The index was computed for seventeen of the twenty-seven comparisons in Table 6, selected at random, on the basis of the six sectors in our classification. The coefficient of rank correlation between the indexes based on the nineteen categories and those based on six sectors was 0.95. It might thus have been possible to compute the index for comparisons involving countries for which

squared difference was expressed as a ratio of the sum of the two percentages being compared, and the ratios were summed) were also tried. They yielded substantially similar results.²² We chose the simpler measure because the latter of these alternatives has the disadvantage of minimizing the relative importance of differences in food and other categories that loom large in percentage terms, while the former tends to exaggerate the importance of such groups. All three methods share the disadvantage that tests of significance apparently cannot be applied.²³

SIMILARITY OF CONSUMPTION PATTERNS IN RELATION TO INCOME DIFFERENCES

The first use to which we put our index was to investigate the connection

data were unavailable for one or more of the nineteen categories and to interpolate the results. However, the indexes computed in the following pages are all based on nineteen categories except for comparisons involving Denmark which are based on eighteen categories.

²² For the twenty-seven comparisons in Table 6, the coefficient of rank correlation between our index and the sum of the squared differences is 0.98; for our index and the sum of the relative squared differences it is 0.95.

²³ This disadvantage is not characteristic of methods of calibrating differences based on the idea of rank correlation. The drawback of these techniques, however, is that the same difference in rank may apply to large numerical differences in our percentages. This is especially serious for a classification such as the one we are using where there is a major category, food, that ranks first in nearly all countries yet shows a substantial range of variation. In order to make effective use of this approach, therefore, food would have to be split into subgroups.

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between differences in per capita income or consumption and differences in consumption patterns. For this purpose, the United States per capita consumption was compared to that of each of the nine countries for which complete consumption data were available, and the similarity index computed for each comparison. The results are ranked according to each country's per capita consumption as a percentage of that of the United States with the highest at the top:

Country	1950 per capita Consumption (US=100)	Index of Similarity
Canada	60	17
Sweden	54	44
United Kingdom	53	43
Denmark	47	42
France	46	52
Norway	40	44
Netherlands	35	48
Germany	34	51
Italy	24	74

The figures indicate that the degree of similarity in consumption patterns is directly correlated with the degree of similarity in levels of per capita income.²⁴ While the use of the United States as a base gives a closer association than the use of other countries, there seems little doubt about the existence of a significant relationship.²⁵

²⁴ The coefficient of rank correlation between the two columns of numbers in the text table is 0.77. It is significant at the 2 percent level.

²⁵ As will be evident in a subsequent section, there are often close ties between neighboring countries that result in more similar consumption patterns than might be expected on the basis of income alone. This disturbing influence in the rank correlation with the United States as the base makes itself felt only in connection with Canada, and even here the practical effect is nil be-

SIMILARITY OF CONSUMPTION PATTERNS IN RELATION TO HISTORICAL TIME

If the similarity in consumption patterns is closely related to the degree of difference in per capita real income or consumption, it might be reasonable to suppose that the consumption pattern of a high-income country may have been at an earlier point in its development (and at a lower per capita income level) more similar than is the current distribution of consumers' expenditures to the consumption pattern of a country that still has a low income. In short, the question is whether particular per capita income levels are characterized by unique consumption patterns, regardless of the point in historical time when the income levels are achieved.

A simple test that is relevant to this question is to compare both the 1909 and 1950 distribution of consumers' expenditures for the United States with the 1950 distributions for other countries whose 1950 per capita real income was closer to that of the United States in 1909 than to the United States 1950 level. If historical time makes little or no difference, the United States 1909

cause Canada happens to have the closest income level to that of the United States among the countries included.

If the United Kingdom is used as a base, ρ is 0.68 and is significant at the 5 percent level. It should be noted that in the case of the United Kingdom and other countries which have per capita incomes that are below that of some other nation, it is necessary to correlate the similarity index with the percentage differences from the base country's per capita income, ranking the percentage differences without regard to sign.

For all the comparisons included in Table 6, the coefficient of rank correlation is 0.74, which is significant at the 0.1 percent level.

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consumption pattern should be more similar to those of the other countries than is the 1950 United States pattern.

The test was made for Canada and the four major countries of Western Europe. The results were as follows:

SIMILARITY OF CONSUMPTION PATTERNS IN RELATION TO GEOGRAPHICAL PROPINQUITY

The difference between the similarity indexes for the Canada-United States

	(1) Per capita Ratio Consumption on US Base	(2) Similarity Rent Included	(3) Indexes Rent Excluded
UK 1950—US 1950	53	43	47
UK 1950—US 1909	104	39	31
France 1950—US 1950	46	52	46
France 1950—US 1909	87	49	30
Germany 1950—US 1950	34	51	54
Germany 1950—US 1909	64	52	43
Italy 1950—US 1950	24	50	67
Italy 1950—US 1909	45	62	44
Canada 1950—US 1950	60	17	19
Canada 1950—US 1909	118	32	29

No consistent picture emerges when the similarity indexes are computed for all categories as in Column 2. However, these results are heavily influenced by the fall in the United States rent ratio from 19.1 in 1909 to 10.8 in 1950, the latter level being much closer to those of the other countries. If rents are excluded from the test as in Column 3,²⁶ the United States 1909 pattern more nearly matches the European patterns of today than does the current United States distribution. The major factor in this outcome is, of course, the great rise in the relative importance of the automobile. However, for food, alcoholic beverages, personal care and adornment, household goods, and health also, the 1909 ratios tend to match the European ones better than the 1950 ratios. For Canada, the opposite is true in nearly all particulars.

²⁶ See section on "Rents" for reasons for discounting the significance of the rent figures.

comparison and the Sweden-United States comparison is much greater than seems warranted by the relative deviations of the per capita consumption levels of the two countries from that of the United States. How can this be explained? An obvious possibility is that the geographical proximity of Canada and the United States have brought about a cultural and economic interchange that has made their consumption patterns more similar than they otherwise would be.

In Table 6 more than a score of comparisons are ranked according to the per capita consumption ratio of the low-income country to the high-income country. They are also grouped into three columns according to the degree of geographical propinquity. At per capita consumption levels where there are entries in two or more columns, there is a tendency for the right-most column to have the higher similarity

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TABLE 6. Indexes of Similarity for Comparisons Involving Different Geographical Relationships.

Consumption Level: High Consumption Country = 100	Contiguous Countries		Separated by Narrow Bodies of Water		Noncontiguous	
	Countries	Index	Countries	Index	Countries	Index
98			UK-Sweden	25		
89			UK-Denmark	23		
88					Canada-UK	41
87			Sweden-Denmark	29	France-Norway	36
87			UK-France	37		
75	Denmark-					
	Netherlands	25	UK-Norway	31		
74	France-Germany	24				
74	Sweden-Norway	24				
72	Denmark-					
	Germany	25				
70	Germany-Italy	35				
67					Canada-Norway	41
64			UK-Germany	30		
60	US-Canada	17				
58					Canada-	
					Netherlands	50
54					US-Sweden	44
53					US-UK	43
52	France-Italy	33				
47					US-Denmark	42
46					US-France	52
45					UK-Italy	50
40					US-Norway	44
40					Canada-Italy	69
35					US-Netherlands	48
34					US-Germany	51
24					US-Italy	74

index. However, the overlapping cases are relatively few in number and the results are inconclusive.

The first ten lines of the table, however, hold considerable interest. The United Kingdom and Denmark, Sweden and Norway, and surprisingly, France and Germany have very similar consumption patterns. Denmark stands in an intermediate position with links to Germany and to the Netherlands as well as to the United Kingdom. On the other hand, bordering countries such as Germany and Italy and closely connected countries such as France and the United Kingdom have consumption pat-

terns that differ more widely. As we might expect, proximity facilitates cultural diffusion but does not automatically produce similarity.

CONSUMPTION AND ECONOMIC CHANGE —SOME CONCLUDING OBSERVATIONS

In our busy search for distinguishing differences, we have, perhaps, under-emphasized the most remarkable aspect of the aggregative data that we have had under our microscope. This is that the differences that are revealed are often so slight. Compare, for example, the United States figures for 1909 and

1953, or the United Kingdom figures for 1900 and 1950 (cf. Table 1). True, the relative importance of rent in the former and of food in the latter have declined, and the transport ratio has risen in both. But what other large changes are there? Surely, these numbers fail to give an impression of the revolution in the physical content of living that has occurred in these countries over the past half-century.

There are two possible reasons for this failure. The more disheartening one, particularly after having taken the reader all this distance, is that the usual type of functional classification that we have employed here is not the most significant one in studying economic growth.

The alternative explanation is that consumers' tastes are fairly well fixed and the main channels of consumption are well established. Economic growth, as it affects consumption, therefore tends to be a broad-scale advance in quantities consumed throughout all categories of goods. Some, like transport, advance more; others, like food, advance less. But there are generally few categories in a binary comparison of situations separated by, say 25 percent, in per capita income for which the higher-income situation does not show higher real consumption than the lower-income position. Perhaps the most general exception is domestic service, and even this might not be an exception if we adhered more rigidly to a functional grouping and classified vacuum cleaners, laundry service, and other substitutes for domestic workers in the same category as domestic service.

If we followed this practice, the case of the disappearing domestic worker would illustrate the way in which rela-

tive price changes bring about substantive changes within the broad functional categories. The increased use of substitutes for domestic workers can be explained largely in terms of the double-barreled effect of a relative increase in the wages of domestic servants as they share in rising per capita incomes and a relative fall in the price of household appliances under the impact of technological progress.

The significance of this mechanism of change for economic growth is open to conflicting lines of interpretation. On the one hand, it can be argued that the long-run changes in relative prices stem primarily from the supply side of the demand-supply equation. Technological progress is, in this view, the main source of the price changes, and the paths of technological development are not actively determined by changes in demand. Consumers' tastes are a permissive rather than a determining influence; aside from relatively minor matters of style, they remain substantially unchanged. The changes in consumption that are observed result primarily from the enrichment of the opportunities for choice that industrial innovations provide the consumer. All this is consistent with the views of Marx, Schumpeter, and many others that the dynamic factors bringing about economic growth are to be found in the sphere of production rather than consumption, in the houses of business rather than in the homes of people.

The opposite interpretation is that the technological progress that made possible the price reductions was stimulated and channeled into certain directions by the demands of consumers. A closely related explanation is that changes in consumer demand made it

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feasible for certain firms and industries to achieve a more economical scale of production and thus resulted in the lowering of relative costs and prices.

The remaining hypothesis is, of course, that the interaction between the demand and supply side of the problem has been sufficiently extensive so that neither can be regarded as the dominant influence.

APPENDIX

General Notes

1. In many of the tables actual money expenditure figures have been omitted, and only the percentages included. Total money expenditure, however, is generally given at the end of each table.

2. The money total just referred to generally represents private consumption expenditures within the nation plus consumers' expenditures abroad. The deduction of foreigners' expenditures within the nation was not made because its composition was unknown and the deduction could not, therefore, be distributed among the categories. Other deductions from consumption that were not distributed in the source data, such as government purchases of consumers' goods, are also included in the total. In some cases, of course, foreign and other deductible end uses of consumers' goods were subtracted from the appropriate categories in the source materials, and the money total represents the consumption of residents.

3. While it should be possible for any person to reconcile the figures given

as total money consumption with the estimates in the sources that are cited, this is not true of the figures or the percentages for the individual categories of consumption. In order to adjust these as far as possible to a common classification, some use of unpublished data and of rough estimations was necessary. None of these figures should, therefore, be regarded necessarily as being based directly on official sources.

4. The classification of consumption expenditure follows closely the grouping suggested by the OEEC (see footnote 3 for the citation). Aside from rearranging the groups under six major headings, the only changes are to shift water from "rents" to "fuel, light, and water," to move household nondurables from "household operation" to "household goods," and to combine "entertainment" with "other recreation." Deviations from the classification scheme, which were unavoidable for certain countries, are mentioned in the country notes which follow.

5. As far as the classification into durables, nondurables, and services is concerned, the percentage distributions are based on official figures wherever such data were available. Where there were no estimates in the source materials, commodities and service were assigned to the three classes in accordance with the allocations made by the United States Department of Commerce in the *National Income Supplement, 1954 Edition*, Table 30.

6. Rather than repeat the customary caveat in each table, it may be mentioned here that totals often will not add up exactly, owing to rounding.

APPENDIX TABLE 1. Italy, Germany, France, United Kingdom,
and the United States, 1950

	Italy %	Germany %	France %	UK %	US %
A. Food, drink, and tobacco	57.9	46.9	46.3	40.1	29.5
Food	47.7	37.6	36.5	26.6	24.4
Alcoholic beverages	6.1	3.8	7.6	5.8	2.9
Tobacco	4.1	5.5	2.3	7.7	2.2
B. Personal care and adornment	15.9	13.4	14.6	12.9	11.4
Clothing and footwear	14.4	12.1	11.5	10.1	9.4
Toilet articles, jewelry, and other commodities	.7	.7	1.9	2.4	1.4
Barber and beauty shops	.8	.5	1.1	.4	.5
C. Home expenses	9.3	20.0	16.3	21.5	24.2
Rent	2.5	6.5	3.8	7.9	9.6
Fuel, light, and water	2.9	3.6	3.6	3.9	3.3
Household goods	2.1	7.7	7.3	6.6	8.2
Domestic services	1.5	1.2	1.0	.9	1.3
Household services	.4	1.1	.6	2.1	1.8
D. Transportation and communications	4.6	4.4	5.7	5.9	12.5
User-operated transport	2.1	1.4	3.2	2.0	9.7
Public transport	2.3	2.7	2.2	3.4	1.6
Communications	.2	.3	.4	.6	1.2
E. Recreation, health, and education	10.2	14.9	15.5	16.8	16.1
Recreation	5.3	7.5	8.5	8.7	7.5
Hotels and restaurants	2.4	4.2	5.3	3.1	3.2
Reading materials	1.3	.6	1.8	2.0	1.2
Entertainment, hobbies, etc.	1.6	2.7	1.4	3.6	3.2
Health	1.6	4.2	4.6	5.2	5.4
Education	3.3	3.3	2.4	2.9	3.2
F. Miscellaneous	2.1	.3	1.5	2.7	6.3
Consumers' expenditures abroad	.3	—	.2	1.2	.7
Other	1.8	.3	1.3	1.5	5.7
Total consumption (including foreign tourist expenditures)	100.0	100.0	100.0	100.0	100.0
Private only as percentage of total private and public:					
E. Recreation, health, and education	6.8	9.5	12.0	9.8	12.6
Health	1.1	1.3	3.1	.5	4.2
Education	.4	.7	.5	.5	.9
Total private consumption (including foreign tourist expenditures)	96.6	94.6	96.4	92.9	96.5

SOURCE: M. Gilbert and I. B. Kravis, *An International Comparison of National Products and the Purchasing Power of Currencies*, Organisation for European Economic Coöperation, 1954.

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NOTES ON THE DATA: The five countries included in this table are the only ones for which data on public expenditures for health and education were available. The detailed data for Italy, Germany, and France are not elsewhere given, but there are special tables for the United Kingdom and the United States.

Private expenditure for health, education, and total consumption are given at the bottom of the table expressed as percentages of total private and public consumption. Except where otherwise stated, the comparisons made in the

body of the paper are based on the distributions of private expenditures.

The percentages shown for the United Kingdom and the United States do not correspond exactly to those given in the tables devoted exclusively to those countries. This is due mainly to differences in classification, particularly the inclusion here of public expenditures for health and education; also, later sources were used for the country tables and these involved some minor revisions in the earlier estimates upon which the OEEC study was based.

APPENDIX TABLE 2. United States (1909-1953) and Canada (1930-1953)

	United States													Canada				
	Dewhurst					Department of Commerce												
	1909	1914	1919	1921	1923	1925	1927	1929	1929	1930	1937	1938	1950	1953	1930	1937	1950	1953
A. Food, drink, and tobacco	32.8	33.7	35.1	28.7	27.3	27.8	27.3	27.1	25.0	25.3	29.4	29.2	29.4	30.4	29.0	28.2	31.1	30.3
Food	24.4	25.5	29.4	23.5	22.8	23.3	22.7	22.5	22.9	23.3	22.7	22.4	24.2	25.3	23.1	22.5	23.3	22.9
Alcoholic beverages	6.2	6.0	3.3	2.5	2.3	2.4	2.4	2.5	—	—	4.2	4.1	3.0	2.8	3.3	3.0	4.4	4.5
Tobacco	2.2	2.2	2.4	2.7	2.2	2.1	2.2	2.1	2.1	2.0	2.5	2.6	2.2	2.3	2.5	2.8	3.4	2.9
B. Personal care and adornment	14.0	13.2	15.1	15.9	15.8	14.5	14.8	13.7	14.0	13.5	12.0	12.4	11.4	10.4	13.5	13.2	13.0	12.4
Clothing accessories and footwear	12.3	11.5	12.9	13.8	13.7	12.5	12.6	11.6	11.9	11.3	10.1	10.5	9.5	8.6	11.5	11.3	11.0	10.4
Jewelry and watches	.8	.8	1.1	1.0	.8	.8	.8	.7	.7	.7	.5	.5	.7	.7	.6	.6	.6	.6
Personal care	.9	.9	1.0	1.1	1.3	1.3	1.4	1.4	1.4	1.5	1.4	1.5	1.2	1.1	1.4	1.3	1.4	1.4
C. Home expenses	33.5	32.5	26.8	31.4	31.4	30.3	29.9	28.5	29.8	30.6	27.3	27.9	26.4	25.9	28.3	28.0	23.6	25.1
Rent	19.1	18.4	13.2	17.1	15.7	15.7	14.9	13.8	14.3	15.4	12.4	13.4	10.8	11.8	15.7	15.0	11.2	12.6
Fuel, light, and water	4.6	4.9	3.5	4.6	4.6	3.8	4.1	3.7	3.9	4.3	4.5	4.6	3.5	3.4	4.2	4.5	4.1	3.8
Household goods	5.8	5.5	7.1	6.3	7.7	7.4	7.3	7.3	7.5	6.9	6.9	6.5	8.7	7.3	5.3	5.8	6.6	6.9
Domestic services	2.5	2.1	1.6	1.8	1.8	1.8	1.9	1.9	2.2	2.1	1.8	1.6	1.4	1.3	2.0	1.7	.4	.4
Household services	1.5	1.6	1.4	1.5	1.5	1.6	1.7	1.8	1.9	1.9	1.7	1.8	2.0	2.1	1.0	1.1	1.4	1.4
D. Transportation and communication	5.1	6.4	8.3	8.9	9.8	10.6	9.7	9.9	10.5	9.5	10.7	9.7	13.1	12.9	9.8	11.0	13.2	13.8
User-operated transport	2.1	3.1	5.6	5.5	6.9	7.7	6.7	7.1	7.5	6.5	7.8	6.9	10.4	10.2	5.6	7.1	9.6	10.2
Purchased transport services	2.5	2.8	2.3	2.7	2.4	2.3	2.3	2.1	2.1	2.1	1.8	1.8	1.6	1.5	2.9	2.5	2.4	2.2
Communications	.4	.4	.4	.5	.5	.6	.7	.8	.9	1.0	1.0	1.1	1.1	1.3	1.3	1.4	1.2	1.4
E. Recreation, health, and education	8.2	8.2	8.7	9.0	9.4	9.8	10.6	11.2	10.9	11.6	12.2	12.5	12.9	12.9	9.8	9.8	9.9	10.2
Recreation	4.7	4.8	4.6	5.5	5.5	5.7	6.3	6.6	6.3	6.6	7.4	7.4	7.7	7.5	4.6	4.6	5.1	5.2
Entertainment	—	.7	.7	1.1	1.1	—	1.4	1.5	1.4	1.5	1.6	1.6	—	1.1	—	—	—	—
Hotels and restaurants	1.3	1.4	1.3	1.7	1.6	1.9	2.1	2.2	2.0	2.1	2.8	2.8	3.3	3.3	2.0	1.8	2.8	2.8
Reading materials	1.3	1.3	1.2	1.4	1.3	1.3	1.3	1.4	1.2	1.3	1.3	1.3	1.2	1.2	1.1	1.3	.9	1.0
Other recreation	2.0	1.3	1.4	1.4	1.5	2.5	1.4	1.5	1.7	1.6	1.7	1.7	3.2	1.9	1.6	1.5	1.4	1.4
Health	2.8	2.7	3.4	2.8	3.3	3.5	3.6	3.7	3.7	4.0	4.0	4.2	4.3	4.3	4.5	4.5	4.2	4.5
Education	.7	.8	.7	.7	.7	.7	.7	.8	.8	1.0	.9	.9	1.0	1.1	.7	.7	.6	.6
F. Miscellaneous	6.4	6.0	6.1	6.4	6.3	6.9	7.7	9.7	9.9	9.4	8.4	8.3	6.8	7.5	9.6	9.8	9.2	8.2
Consumers' expenditures abroad	.3	.3	.1	.3	.3	.5	.5	.6	.8	.9	.7	.6	.7	1.0	3.0	2.8	2.2	2.9
Other	6.1	5.6	6.1	6.1	5.9	6.5	7.2	9.1	9.0	8.4	7.7	7.7	6.1	6.5	6.6	6.9	7.0	5.3
Total Consumers' Expenditures (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Consumers' Expenditures (bil.\$)	28.8	33.4	60.6	55.8	66.6	71.8	74.6	80.8	79.1	71.1	67.4	64.8	194.5	230.7	4.4	4.0	12.3	15.4

SOURCES: (Canada)—National Accounts Income and Expenditure, 1926-1950 and National Accounts Income and Expenditures, 1950-1953, Dominion Bureau of Statistics, 1951 and 1953, respectively.
 (United States)—Department of Commerce, National Income Supplement (1954 ed.); J. F. Dewhurst et al., America's Needs and Resources: A New Survey (New York: Twentieth Century Fund, 1955); S. Kuznets, National Product since 1869 (National Bureau of Economic Research, 1946).

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NOTES ON THE DATA: Canadian data on aggregative consumption expenditures are published for eight major groups and about a score of minor ones. Additional details necessary for converting to the classification used in this paper were kindly supplied by the National Income Section of the Dominion Bureau of Statistics, but some points remained on which rough allocations had to be made between different categories. In a few cases, as the division of expenditures on alcoholic beverages between the commodity and service components, United States data were used as guides. For purchased meals, it was assumed that 50 percent of the expenditures represented food and 50 percent the value of the restaurant service.

The main points of deviation from the classification used for the other countries are as follows: (1) As in the case of the United States, accessories are included with clothing so that the "other personal effects" group becomes simply jewelry and watches. (2) Although every effort was made to allocate the relatively large Canadian miscellaneous item, the size of the entry

for "miscellaneous-other" in the accompanying table shows that only limited success was attained. In comparisons with other countries it should be borne in mind that the size of this item reflects a lack of data rather than high Canadian consumption of certain goods that do not belong in one of the previous categories.

Unlike the percentage distributions among the various classes discussed thus far, the percentage distributions among durables, nondurables, and services are based on the official figures given in the sources. From the present standpoint, these data overestimate the nondurable component and underestimate services and durables, the latter more seriously than the former. Services are somewhat underestimated because net rather than gross consumers' expenditures abroad are included. As for durables, the National Income Section states that it has as yet been able to include only jewelry, watches, clocks, silverware, furniture and furnishings, appliances, and radios and automobiles. Among the omitted items are bicycles, motorcycles, and durable sports equipment.

APPENDIX TABLE 3. United States, 1869-1878 to 1944-1953

	Nondurables						Services		Total
	Total	Food and Drink	Clothing and Accessories	Other	Durables	Total	Rent	Other	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Kuznets									
1. 1869-1878	65.5	37.5	19.3	8.7	8.2	26.2	12.4	13.8	100
2. 1874-1883	65.6				7.6	26.8	12.6	14.2	100
3. 1879-1888	64.6	33.0	16.6	14.8	7.9	27.4	12.7	14.7	100
4. 1884-1893	63.4				8.5	28.0	12.8	15.2	100
5. 1889-1898	62.9	34.6	16.4	11.8	8.2	28.8	13.2	15.6	100
6. 1894-1903	62.1	35.0	15.4	11.7	7.8	30.0	13.8	16.3	100
7. 1899-1908	60.6	34.0	15.2	11.4	8.0	31.4	14.4	16.9	100
8. 1904-1913	59.2	33.5	14.6	11.1	8.1	32.6	15.0	17.6	100
9. 1909-1918	60.2	33.9	14.2	12.0	8.4	31.4	13.0	18.3	100
10. 1914-1923	59.0	31.1	14.8	13.1	9.4	31.5	13.2	18.2	100
11. 1919-1928	55.0	27.8	14.2	13.0	10.6	34.2	14.1	20.2	100
12. 1924-1933	51.9				10.2	37.8	14.6	23.2	100
13. 1929-1938	52.8				9.1	38.0	14.1	23.8	100
Commerce									
14. 1929-1938	49.8	26.6	10.8	12.3	9.4	40.8	14.8	26.0	100
15. 1934-1943	53.8	29.8	11.1	12.8	9.2	37.0	12.7	24.2	100
16. 1939-1948	56.6	32.2	12.0	12.4	9.8	33.5	10.7	22.8	100
17. 1944-1953	54.7	32.1	10.5	12.0	11.9	33.3	10.8	22.6	100
18. 1949-1953	52.6	31.4	9.4	11.9	13.2	34.1	11.4	22.8	100

Sources: Kuznets, *op. cit.*; Col. (1): p. 106, cols. (1) + (2); Col. (2) & (3): p. 146, col. (2); Col. (4): cols. (1) - [(2) + (3)]; Col. (5): p. 106, col. (3); Col. (6): p. 144, col. (3); Col. (7): p. 144, col. (1); Col. (8): p. 144, col. (2); Col. (9): p. 106, col. (5).
 Department of Commerce, *op. cit.*, pp. 206-09; Col. (1): line 104; Col. (2): line (1) - line (6); Col. (3): lines (8) + (10) + (13); Col. (4): col. (1) - [cols. (2) + (3)]; Col. (5): line (103); Col. (6): line (105); Col. (7): line (21); Col. (8): col. (6) - (7); Col. (9): line (102).

COMPARISONS OF THE STRUCTURE OF CONSUMPTION

NOTES ON THE DATA: For the years since 1929, the Department of Commerce estimates given in Table 30 of the *National Income Supplement* were used. Consumers' expenditures in this source are subdivided into twelve major and eighty-odd minor groups. While the degree of detail is much richer than is available for any other country, it is unfortunately less detailed than the corresponding table in the predecessor volume (1951), and the latter had to be used for some minor items.

The estimates of consumption expenditures for the years 1909–1929 are those derived by Dewhurst, mainly by extrapolating the Commerce figures backward on the basis of the estimates by W. H. Lough (*High-Level Consumption*, McGraw-Hill Book Company, 1935) and H. Barger (*Outlay and Income in the United States, 1921–1938*, National Bureau of Economic Research, 1942). Dewhurst used Barger's data on thirty-four categories of consumers' services to extrapolate services in the 1920's, and Lough's figures to carry the services estimates back to 1909 and to extrapolate the commodity data for the entire period 1919–1929. Lough published estimates for ten major categories and well over two hundred minor commodities and commodity groups. The degree of detail retained by Dewhurst represents a compromise between that of Lough and that of the Department of Commerce. In a few instances, it was necessary for the present writer independently to extrapolate Commerce estimates on the basis of Lough's data, and in other cases durable and non-durable components of a given category were broken out roughly on the basis of proportions found in data in S. Kuznets (*Commodity Flow and Capital Formation*, National Bureau of Economic Research, 1938); and W. H. Shaw (*Value of Commodity Output since 1869*, National Bureau of Economic Research 1947).

The major modification in the Commerce-Dewhurst figures for the entire period was to separate the food and service components in purchased meals and beverages. In the case of the Commerce data which contain separate estimates for purchased meals and beverages, it was assumed that half of the expenditures represented food and half the services of restaurants. Expenditures on meals and beverages were extrapolated back from 1929 by using Kuznets' series on wages and salaries paid by restaurants (*National Income and Its Composition*, National Bureau of Economic Research, 1941, vol. 1, p. 762). (Kuznets' wage and salaries series were available only to 1919; they were extended to 1909 on the basis of movements in the number of waiters and in the general wages.) The resulting series on purchased meals and beverages for 1909–1929 was divided evenly between "food" and "restaurants."

The figures in Appendix Table 2 conform to the classification used in this paper with one major and a few minor exceptions. Clothing accessories such as umbrellas and handbags are included with clothing rather than in the "other personal effects" classification as suggested in the OEEC report. As a result the latter category is reduced to jewelry and watches. One of the minor deviations involves bicycles (in recreation instead of user-operated transport).

For 1929, percentage distributions based on both the Dewhurst and Commerce figures are given. For the years prior to 1909, no annual estimates of the components of consumers' expenditures are available. There is a great need for someone to do for this period what Lough did for the years following 1909. In the absence of such a work, however, it is possible to fall back upon decade averages for some major components given by Kuznets in *National Product since 1869*. Kuznets' perishable and semidurable commodity classifica-

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tions have been combined under the heading of nondurables for comparison with the Department of Commerce nondurable category. While there are some commodities for which this combination is obviously inappropriate (e.g., tires, which are classed as semidurable by Kuznets and as durable by Commerce),

it does not seem to be a bad approximation. Thus, in the decade for which both Kuznets and Commerce figures are available, 1929–1938, the percentage for nondurables on the Kuznets basis (i.e., his perishables plus his semidurables) is 52.8 and the percentage for the Commerce nondurables is 49.8.

APPENDIX TABLE 4. United Kingdom

	1900 (P, Rec.)	1901 (D)	1907 (P, Rec.)	1908 (D)	1909 (Rev.)	1910 (P)	1913 (P, Rec.)	1919	1938	1950
A. Food, drink, and tobacco	45.5	45.1	44.2	44.0	43.9	44.0	43.8	46.0	41.1	42.7
Food	32.5	32.5	33.4	33.4	33.7	33.5	33.6	35.1	30.4	27.3
Alcoholic beverages	11.3	10.9	9.3	8.9	8.3	8.6	8.3	8.4	6.6	7.5
Tobacco	1.6	1.6	1.8	1.8	1.8	1.9	1.9	2.5	4.1	7.9
B. Personal care and adornment	11.6	11.7	11.3	11.5	11.8	11.8	12.6	17.5	n.a.	14.2
Clothing and footwear	9.2	9.5	8.8	9.2	9.4	9.4	10.0	15.0	10.4	10.4
Hairdressing	.4	.3	.3	.3	.3	.4	.3	.3	n.a.	.4
"Other goods"	2.0	1.9	2.1	2.0	2.1	2.1	2.2	2.2	n.a.	3.3
C. Home expenses	26.3	26.3	27.0	27.0	26.9	26.3	25.8	21.2	n.a.	21.6
Rent	10.3	10.5	11.1	11.2	11.5	11.2	10.5	5.5	11.0	8.1
Fuel, light and water	5.1	4.7	4.7	4.5	4.3	4.2	4.3	3.7	4.8	4.0
Household goods	4.2	4.2	4.4	4.4	4.2	4.1	4.5	5.8	n.a.	6.3
Domestic services	3.7	3.7	3.8	3.8	3.8	3.8	3.6	3.1	2.8	.9
"Household services"	3.1	3.2	3.1	3.2	3.0	3.0	2.9	3.1	n.a.	2.2
D. Transportation and communications	5.3	5.4	5.6	5.4	5.5	5.7	5.9	5.4	7.4	6.2
User-operated transport	1.4	1.4	1.5	1.3	1.2	1.4	1.6	1.8	2.9	2.1
Public transport	3.6	3.6	3.8	3.8	3.8	3.9	3.9	3.3	3.8	3.6
Communications	.3	.4	.4	.4	.4	.4	.4	.3	.7	.0
E. Recreation, health, and education	8.2	8.1	8.8	8.6	8.7	8.7	8.5	7.0	n.a.	12.6
Recreation	5.3	5.2	5.9	5.8	5.9	5.9	6.1	5.1	n.a.	6.9
Hotels and restaurants	2.4	2.4	2.8	2.8	2.9	2.9	3.0	2.4	n.a.	1.5
Reading materials	.9	.9	1.1	1.0	1.0	1.1	1.0	.8	1.5	1.5
Entertainment, hobbies, etc.	2.0	1.9	2.0	2.0	2.0	2.0	2.1	1.9	n.a.	3.9
Health	2.1	2.1	2.2	2.2	2.2	2.2	2.0	1.4	n.a.	5.3
Education	.8	.8	.7	.6	.6	.6	.5	.5	n.a.	.5
F. Miscellaneous	3.1	3.4	3.1	3.4	3.3	3.4	3.3	2.8	—	2.7
Consumer expenditures abroad	1.3	1.5	1.1	1.3	1.2	1.4	1.3	1.6	.8	1.2
Other	1.8	1.8	2.0	2.1	2.1	2.0	2.0	1.3	n.a.	1.5
Total consumption (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total consumption (£ mil.)	1656	1697	1834	1835	1852	1902	2095	4635	4335	9722

SOURCES: A. R. Prest, *Consumers' Expenditures in the United Kingdom, 1900-1919* (New York: Cambridge University Press, 1954). *National Income and Expenditure, 1946-1951*. Central Statistical Office, August, 1952. *National Income and Expenditures of the United Kingdom, 1946 to 1950*, Cmd. 8203, 1951.

P = Prosperity

D = Depression

Rec. = Recession

Rev. = Revival

From W. L. Thorp, *Business Annals*, National Bureau of Economic Research, 1936, pp. 173-76.

NOTES ON THE DATA: The percentage distributions for 1900-1919 are based on Prest's painstaking reconstruction of consumers' expenditures. Although Prest's data lend themselves fairly well to the purpose at hand, several departures from the desired classification had to be made in Appendix Table 4. First, while the service component of purchased food is placed under hotels and restaurants, the service portion of expenditures for liquor consumed on-premises is included with alcoholic beverages. Second, phonographs and musical instruments were included under recreation rather than as household goods. Finally, three categories ordinarily included in the classification had to be replaced with slightly different groupings of products. Two of these were in the personal care and adornment sector, where "personal care" and "other personal effects" are jointly approximated by Prest's "hairdressing" and "other goods." "Hairdressing" included only the *services* that belong in "personal care"; the *commodities* are in "other goods," which contains also products that should be in "other personal effects" such as jewelry and watches and products that do not belong in the personal care and adornment sector at all, such as paints and stationery. The third category that is somewhat different in composition is "household services"; this was approximated by using Prest's "miscellaneous services,"

which is made up predominantly of household services such as laundry and dry cleaning, but also includes a few extraneous items such as pets and photographers' services.

The degree of error involved in dividing Prest's estimates into durables, non-durables, and services may be gauged from the fact that the three main categories which had to be broken down into these three types of product in a somewhat arbitrary fashion—"furniture and soft furnishings," "running expenses of motor cars and carriages," and "other goods"—varied around 8 per cent of total consumption expenditures in the several years in the period. The proportions of durables, nondurables, and services in each category for the year 1950 were used as a guide in dividing each of the three groups.

The entries for 1938 are made in Table 4 for those groups for which the 1938 data were, or could be made, comparable. For 1950, the official estimates supplemented by United Kingdom figures in the Gilbert-Kravis report were sufficiently detailed so that it was possible to arrange the expenditures to a basis at least roughly comparable to those for 1900-1919. Public expenditures on health but not on education have been included in the 1950 data.

The 1950 data for the United Kingdom more in accord with the usual grouping may be found in Appendix Table 1.

APPENDIX TABLE 5. Denmark, The Netherlands, Norway, and Sweden

	Norway				Denmark			Sweden			Netherlands		
	1910	1930	1938	1950	1949	1938-39	1950	1953	1950	1953	1923	1930	1938
1. Food, drink, and tobacco	41.3	37.5	36.9	35.2	38.6	37.9	38.3	39.6	38.3	39.6	45.1	41.8	41.9
Food	39.9	31.3	30.9	27.3	29.1	32.1	31.4	32.5	31.4	32.5	38.8	35.4	36.6
Alcoholic beverages	1.4	2.1	2.3	3.1	5.2	2.2	3.0	3.3	3.9	3.9	3.1	2.7	2.4
Tobacco											3.2	3.6	3.1
2. Personal care and adornment													
Clothing and footwear	11.9	12.4	11.9	16.7	12.8	12.8	15.2	13.2	19.5	17.3	10.9	11.8	10.6
Other personal effects	n.a.	1.2	1.3	1.6	1.2	1.4	1.7	1.6	15.2	13.2	10.2	11.0	9.7
Personal care	.3	.9	1.1	1.1	1.4	2.7	2.6	2.5	1.7	2.5	.7	.8	.9
3. Home expenses													
Rent	23.3	25.8	25.9	20.2	23.1	25.4	21.0	20.5	21.0	20.5	28.8	30.5	30.6
Fuel, light, and water	10.1	12.4	11.4	5.1	6.2	12.0	8.6	8.2	8.6	8.2	7.0	9.2	11.3
Household goods	3.9	3.9	4.2	3.6	3.6	4.6	4.1	4.4	4.1	4.4	4.2	4.9	5.4
Domestic services	4.2	5.2	6.8	8.6	11.4 ^a	6.3	6.9	6.4	6.3	6.4	13.2	12.3	9.6
Household services	5.1	3.1	2.6	1.4	1.9	1.7	1.0	1.1	1.7	1.1	2.8	2.4	2.8
Household services		1.1	.9	.9	.8	.8	.4	.4	.4	.4	1.6	1.7	1.4
4. Transportation and communication													
Use-operated transport	.3	4.9	5.8	6.3	6.1	8.6	9.5	10.3	9.5	10.3	3.0	3.4	3.6
Public transport		1.2	2.2	1.6	1.5	3.3	3.8	4.8	3.8	4.8	.9	1.1	2.3
Communications	2.0	3.1	3.1	4.1	3.7	4.4	4.8	4.3	4.8	4.3	1.9	2.0	1.0
Communications	n.a.	.6	.5	.6	.9	.8	.9	1.2	.9	1.2	.2	.3	.3
5. Recreation, health, and education													
Recreation	11.3	11.6	11.6	12.1	14.4	8.7	9.5	9.8	9.5	9.8	8.4	8.4	9.8
Hotels and restaurants	7.7	7.8	8.2	10.5	10.5	7.0	7.7	7.9	7.7	7.9	2.4	2.5	2.8
Hotels and restaurants	3.6	3.4	3.3	3.1	3.3	1.9	2.2	2.2	2.2	2.2	n.a.	n.a.	n.a.
Reading materials	n.a.	2.3	2.3	2.8	5.1	1.6	2.0	2.1	2.0	2.1	n.a.	n.a.	n.a.
Entertainment, hobbies, etc.	n.a.	2.0	2.2	2.3	2.1	3.5	3.6	3.6	3.6	3.6	n.a.	n.a.	n.a.
Health	1.9	3.1	3.4	3.6	3.1	1.7	1.8	1.9	1.8	1.9	3.4	3.5	3.9
Education	n.a.	.4	.5	.3	.8	n.a.	n.a.	n.a.	n.a.	n.a.	2.6	2.4	3.2
6. Miscellaneous													
Consumer expenditures abroad	6.0	5.5	5.5	6.8	2.5	2.4	2.2	2.5	2.2	2.5	—	—	—
Consumer expenditures abroad	2.0	1.3	1.6	3.8	1.1	.7	.7	1.0	1.7	1.5	—	—	—
Other	4.7	3.9	3.9	3.0	1.5	1.7	1.6	1.5	3.8	4.1	3.8	4.1	3.6
Total consumption (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total consumption (mil. kr)	1,138	3,163	3,973	10,755	14,290	8,527	19,746	25,599	19,746	25,599	4,579 ^b	5,182 ^b	4,400 ^b

Sources: (Netherlands)—*Consumers Expenditures in the Netherlands 1923-1939*, Central Bureau of Statistics (1949); *National Accounts of the Netherlands, 1948-1949*, Central Bureau of Statistics (1952).
 (Norway)—*National Accounts, 1900-1929* and *National Accounts, 1938 and 1943-1948*, Central Bureau of Statistics of Norway (1953 and 1954, respectively).
 (Sweden)—E. Lindahl, E. Dahlgren, and K. Kock, *National Income of Sweden, 1861-1930* (Westminster: P. S. King and Son, 1937); *Meddelanden från Konjunkturinstitutet*, Serie A:27 (Stockholm, 1955).

^a Included in household goods.
^b Mil. guilders.

NOTES ON THE DATA:

(*Denmark*) The percentage distribution of Danish consumption expenditures is based on a special regrouping by the Danish Statistical Department along the lines suggested in the United Nations report. It was not possible to make some of the adjustments to this classification that were made for other countries. The major difference is that household services are included in household goods.

(*Netherlands*) For the period 1923–1939, estimates are available for thirty-eight categories of consumption expenditures, many of them broken down into several subgroups. The data do not afford separate figures for hotels and restaurants, entertainment, and reading materials. The last of these is included in education and the other two are combined in “recreation.” The commodities that belong in “other personal effects” are partly in the clothing category and partly in the miscellaneous group.

The 1950 distribution of consumers' expenditures is based on national accounts figures showing sales to consumers of Dutch and imported goods with estimates of trade and transport margins for over two hundred industries. In a few cases, further information would have been desirable to ensure proper classification (e.g., consumers' purchases of “petrol” and “gasoil” were presumed to be for automobile operation and purchases of “petroleum” for heating), but the doubtful items were quantitatively unimportant and the possible error small. Larger errors were probably introduced by assuming that the increases in stocks, which were estimated only for major industry groups, could be prorated among the industries composing each group.

Because of the different sources, the

comparability of the 1923–1938 figures with those of 1950 is probably limited to the food, drink, and tobacco, home expenses, and transportation and communications groups.

(*Norway*) Few if any countries have published aggregative data on consumption expenditures in as useful a form for the study of long-term changes as has Norway. For 1910 and 1930–1938, and since 1948, private consumers' expenditures both in current and constant prices are available for nine major and over thirty minor categories, and for all the years except 1910 the same data are provided for about one hundred minor categories.

The reclassification of the data was easily accomplished. By far the most dubious decision was to include the Norwegian classification “other goods,” which covers a variegated list of products such as jewelry, pipes, walking sticks, batteries, and firearms, in “other personal effects” rather than in the miscellaneous group. The result is to overestimate the “other personal effects” category somewhat, but probably by less than it would be underestimated if “other goods” were not included in it.

The durable goods and services classifications are taken directly from the official statistics. Nondurables are derived by combining the categories “non-durable” and “semidurable” goods given in the source. The result is that some things, such as tires and tubes, that are considered as durables in this paper are included with nondurables. There is, however, an offsetting factor as far as durables are concerned; viz., repair services to durable goods are counted as durables. The net effect is probably to overstate durables and certainly to understate services, but the elements of error involved are not quantitatively important.

APPENDIX TABLE 6. Sweden, 1861-1930, 1938-1939, 1950, 1953

	1861 (E)	1871 (E)	1877 (P)	1879 (T)	1880 (E)	1883 (P)	1889 (E)	1900 (E)	1910 (P)	1913 (P)	1920 (P)	1923 (J)	1929 (P)	1930 (C)	1938-39	1950	1953
A. Food, drink, and tobacco	48.1	48.0	47.3	50.2	48.0	47.2	41.6	43.7	43.0	42.8	38.7	37.1	34.3	32.9	38.2	38.5	40.0
Food and tobacco	43.9	44.3													34.6	36.2	
Alcoholic beverages	4.2	3.7													4.0	3.9	
B. Personal care and adornment	15.9	18.0	19.0	16.4	19.2	20.1	23.4	20.9	20.5	20.7	25.5	22.5	22.1	22.9			
Textile, clothing, and leather goods ^a																	
C. Home expenses	15.7	14.2	12.5	13.3	12.6	12.2	12.6	10.7	10.0	9.7	5.3	9.7	10.8	11.2	12.1	8.7	8.3
Rent	9.2	8.1	7.4	7.0	7.1	6.3	5.4	4.7	3.2	3.7	4.3	3.6	3.3	3.2	4.6	4.1	4.5
Fuel, light, and water	5.0	5.4	7.1	6.2	6.3	7.5	9.3	11.5	13.6	12.8	15.4	13.4	15.2	15.2			
Household goods ^b	4.7	3.9	3.5	3.6	3.4	3.0	2.9	2.2	2.1	2.3	2.3	2.4	2.0	2.0	1.7	1.0	1.1
Domestic services																	
D. Transport and communication	2.2	.6	.9	.1	1.2	1.2	1.5	2.1	2.6	2.8	2.6	3.8	4.5	4.7	4.5	4.8	4.4
Public transport services	.1	.1	.1	.1	.1	.1	.2	.3	.4	.4	.4	.6	.6	.7	.8	1.0	1.2
Communications																	
E. Recreation, health, and education	.9	1.3	1.5	1.5	1.6	1.7	2.0	2.6	3.0	3.1	3.7	4.3	4.6	4.6	4.6	7.5	8.5
Recreation	.3	.6	.7	.8	.8	.8	.8	1.0	.9	1.2	1.3	1.6	1.7	1.7	1.9	2.3	2.2
Hotels and restaurants	.5	.6	.8	.6	.8	.9	1.0	1.5	1.9	1.8	2.2	2.4	2.5	2.6	1.7	2.0	2.1
Reading materials	.1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.3	.3	.4	3.9	3.8	4.1
Entertainment	.3	.3	.3	.4	.4	.4	.5	.6	.6	.6	.6	.8	.7	.8	1.7	1.8	1.9
Health	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.4	.4	.4	.4			
Education	.1	.1	.1	.2	.1	.1	.4	.5	.7	.8	.9	1.4	1.5	1.5			
F. Miscellaneous ^c	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total private consumption expenditures	4.4	4.4	6.2	5.4	5.4	6.7	8.2	10.4	12.4	11.9	14.7	13.0	14.8	14.8	10.4	11.5	11.5
Durables	74.2	75.5	75.3	75.0	75.7	75.1	72.4	71.6	69.2	70.6	70.6	65.0	61.3	60.6	60.5	63.1	63.2
Nondurables	21.4	20.1	18.5	19.7	18.8	18.1	19.4	18.0	18.4	18.9	14.6	22.1	23.9	24.6	29.1	25.4	25.3
Services																	
Public consumption expenditure as % of total private consumption expenditure	.1	.1	.1	.1	.1	.1	.2	.2	.3	.3	.3	.5	.6	.6			
Health	.5	.6	.6	.8	.8	.7	1.0	1.1	1.5	1.5	1.9	2.5	2.3	2.4			
Education	.5	.5	.8	.9	.9	.8	.8	.7	.6	.5	.4	.5	.5	.5			
Miscellaneous																	
Total private consumption expenditure (mil. kr.) ^d	649	786	1,143	991	1,049	1,160	1,198	1,749	2,565	2,935	9,746	5,799	6,697	6,694	8,468	19,611	25,350

Sources: E. Lindahl, E. Dahlgren, and K. Kock, *op. cit.*; *Meddelanden från Konjunkturinstitutet*, Serie A:27, Stockholm, 1955.

E=Expansion; consumption lower previous year and higher in subsequent year.

C=Contraction; consumption higher previous year and lower in subsequent year.

P=Peak; consumption lower in surrounding years.

T=Trough; consumption higher in the surrounding years.

^aDurables and nondurables in clothing and textile industries and nondurables in leather, hair and rubber industries (mainly footwear).

^bMineral and metal products (including transportation equipment), wood products, chemical products (including soap and matches), durable products of stone, clay and glass industries (household glass and china), and durable products of leather, hair, and rubber industries (bags and trunks).

^cEarnings of nonconformist clergy, banking, private insurance, sick benefit societies, and net tourist expenditure abroad.

^dTotal consumption as given by Lindahl, Dahlgren, and Kock (*op. cit.*, pt. I, pp. 296-97, Col. 9) less public administration and services of consumers' durables other than dwellings plus current purchases of consumers' durables (pt. I, pp. 130-31, Col. 7).

NOTES ON THE DATA: The two-volume work by Lindahl, Dahlgren, and Kock contains annual estimates for personal consumption for 1861 to 1930 broken down by industry of origin (i.e., agriculture, industry, commerce) but not by categories of final product (i.e., food, clothing, etc.). Fortunately, the Swedish estimators published sufficiently detailed data so that it is possible to convert their consumption data to consumers' expenditures at market prices for various categories of consumers' goods. This can be done because there are annual estimates of various end uses (among which are consumers' durable goods and consumers' nondurable goods) of imports and production minus exports for each of eight agricultural and nine industrial classifications. In addition, the authors reported the markups that they applied to each category of goods in order to estimate the output of commerce. By using these markups, which were generally assumed by the authors to be constant during the entire period, it was possible to get market price estimates for consumers' purchases of the output of each of the seventeen classifications. The classification of non-agricultural commodity output is not sufficiently fine to arrange consumers' expenditures to the grouping adopted in the paper. The major differences concern the clothing and household groups. The category in Appendix Table 6 that is nearest to the clothing group includes all the products of the textile industries that were allocated to consumers plus all the nondurable products of the leather, rubber, and hair industries that were assigned to consumers. The group identified as "household goods" in the table includes in addition to the products normally in this group personal care commodities and transportation equipment.

In the service sector, the Lindahl-Dahlgren-Kock report provides esti-

mates for rents, domestic services, hotels and restaurants, banking and insurance. An estimate is given also for "professional services," which includes entertainment, health, education, and religion. These categories were split out from the total by applying to each the method that the authors used to calculate the total. The basic procedure was to multiply the number of persons engaged by average incomes. In some instances, as in education, an allowance was added for nonwage costs. The authors observe that their estimates for professional services are "rough" ones, and the breaking up of their estimates into finer detail must be considered as yielding ever "rougher" approximations.

Another service for which estimates were derived from the Lindahl-Dahlgren-Kock study was public transport. This was done simply by assuming that all passenger revenues of common carriers represented private consumption.

It will be noted that there are no entries in the table for personal care and household services. As previously mentioned, the commodity component of the former is included in "household goods." No reference is made in the report either to the service component of personal care (barber and beauty shop services) or to household services such as laundry and dry cleaning.

The money totals shown at the bottom of the table are Lindahl-Dahlgren-Kock consumption totals altered by deducting their estimates of public administration and the services of consumers' goods other than dwellings and adding the current purchases by consumers of durable goods. It should be added that the percentage distributions were based on totals that were derived from the manipulations described in previous paragraphs; these totals were all within 4 percent of those shown in the table.

The Konjunkturinstitutet data on

COMPARISONS OF THE STRUCTURE OF CONSUMPTION

private consumption expenditures are published for nine major and more than seventy minor categories for 1938–1939 and annually since 1944. It was, therefore, a relatively simple task to group the data to conform to the classification used in the present study. Separate estimates were not available for private expenditures on education but these are believed to be very minor.

The results of the regrouping of the Konjunkturinstitutet data are shown in Appendix Table 5. For categories that are comparable with those used for the 1861–1930 data, entries of the 1938–

1939 to 1953 figures are also made here.

The percentage distributions among durables, nondurables, and services for the 1861–1930 period contain no greater margin of error than the original Lindahl-Dahlgren-Kock estimates for the various industrial classifications, and, owing to the degree of aggregation involved, probably less. The percentages of the period after 1938 are based on the official figures for durables, nondurables, and services, and it is possible that there might be minor differences in classification as compared to the earlier data.

APPENDIX TABLE 7. Egypt

	1938	1945	1950
Food, drink and tobacco	71.8	74.7	61.2
Food	62.6	63.8	54.2
Beverages	.4	.7	1.2
Tobacco	8.8	10.2	5.8
Clothing	7.4	7.7	15.6
Rent	8.3	4.0	5.4
Fuel and light	1.4	1.3	} 17.9
Transportation and communication	2.5	2.7	
Recreation			
Cafes, sports, and reading	2.5	2.8	
Amusements	1.3	1.2	
Education	.7	.2	} 17.9
Other	4.2	5.4	
Total, percent	100.0	100.0	100.0
Total, £ E (mil.)	141.6	326.4	650.0

SOURCES: M. A. Anis, "A Study of the National Income of Egypt," and "The National Income of Egypt, 1950," *L'Egypt Contemporaine*, Cairo (November–December, 1950, and January, 1953, respectively).

NOTES ON THE DATA: Anis estimated food, tobacco, and rents by aggregative methods, and based the other categories

on the results of family expenditure surveys. The classification in the table is essentially the one used by Anis.

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APPENDIX TABLE 8. Ireland

	1938	1950	1953
Food, drink, and tobacco	48.7	45.3	47.4
Food	34.5	33.1	33.3
Alcoholic beverages and tobacco	14.2	12.2	14.1
Clothing	10.8	14.6	13.3
Home expenses			
Rent	8.4	4.3	3.9
Fuel and light	8.4	6.6	7.0
Domestic service	2.2	1.9	1.8
Travel	1.7	4.1	3.9
Amusements	1.4	1.4	1.3
Professional services	3.6	2.6	2.6
Other goods	10.8	15.4	14.8
Other services	4.0	3.8	3.9
Total, percent	100.0	100.0	100.0
Total, £ mil.	142.4	327.5	384

SOURCE: Communication from the Central Statistics Office.

NOTES ON THE DATA: The percentage official estimates. The categories are distributions in this table are based on those used in the source.

APPENDIX TABLE 9. Israel, 1950

	£ I (mil.)	Percent
Food, drink, and tobacco	132.9	43.6
Clothing and footwear	38.9	12.8
Rent	12.0	3.9
Fuel and light	4.3	1.4
Transportation	10.1	3.3
Other		
Goods	32.2	10.5
Services	74.9	24.5
Total	323.8	100.0

SOURCE: Communication from the Economic Advisory Staff.

NOTES ON THE DATA: Israeli data on consumption are built up from output and imports for a limited number of broad industrial classifications and it is, therefore, possible to break out only a few of the major categories from total consumption. As the table shows, details are unavailable for over a third of total consumption.

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APPENDIX TABLE 10. Japan

A. Two Estimates of the Distribution of Consumers' Expenditures, 1938					
Economic Stabilization Board ^a			National Income Section ^b		
	Mil. Yen	Percent		Mil. Yen	Percent
Food, drink, and tobacco	6,018	43.9	Food, drink, and tobacco	5,800	41.9
Clothing	1,360	9.9	Clothing	1,300	9.4
Home expenses	2,343	17.1	Home expenses	2,100	14.8
Rent	1,257	9.2	Housing	1,400	10.0
Other (except fuel and light)	387	2.8	{ Fuel and light	700	4.8
Fuel and light	699	5.1			
Transportation	1,146	8.4			
Recreation, health, and education			Miscellaneous	4,700	33.9
Education and amusement	855	6.2			
Medical care	893	6.5			
Welfare, religious and other organizations	1,103	8.0			
Overseas travel and remittances	-15	-0.1			
Total	13,703	100.0	Total	13,900	100.0

B. Distribution of Consumers' Expenditures, 1930-1953, Selected Years ^c					
	1930	1937	1946	1950	1953
Food, drink, and tobacco	38.8	41.8	72.2	61.9	55.6
Food				50.8	
Alcoholic beverages				50.8	
Tobacco				5.9	
Clothing	10.5	9.6	5.0	8.3	10.4
Home expenses					
Housing	10.3	10.9	4.4	6.1	7.4
Fuel and light	5.2	4.6	4.3	4.0	3.9
Miscellaneous	35.2	33.1	14.1	19.7	22.7
Total, percent	100.0	100.0	100.0	100.0	100.0
Total, billion yen, current prices	10.6	12.8	333.1	2,443.2	4,415.1
Index of real per capita consumption	100.0	96.5	53.8	73.1	100.6

SOURCE: *National Income and National Economic Accounts of Japan, 1930-1953*, Economic Counsel Board, December, 1954.

^a Cited in *National Income Statistics, 1938-48*, United Nations (1950), p. 107.

^b *National Income and National Economic Accounts of Japan, 1930-1953*, National Income Section, Economic Counsel Board (December 1954), pp. 10-11.

^c Economic Counsel Board, *op. cit.*, pp. 12-13.

NOTES ON THE DATA: Consumption expenditures are available for "foods" (including alcoholic beverages and tobacco), clothing and footwear, "housing" (including gross rents of dwellings, house repairs, water rates, furniture, fixtures, and utensils), light and fuel, and a large miscellaneous category com-

posed of recreation, health, education, personal care, and domestic services, among other things. For 1938, estimates of the Economic Stabilization Board giving a few more details about the miscellaneous group are presented in Table 10A.

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APPENDIX TABLE 11. Puerto Rico

	1950	1953
Food, drink, and tobacco	46.0	47.6
Personal care and adornment	13.2	12.3
Clothing, accessories, and jewelry	11.7	11.2
Personal care	1.5	1.1
Home expenses	20.6	19.1
Housing	7.0	5.6
Household operation	13.6	13.5
Transportation	7.6	8.2
Recreation, health, and education	7.1	7.5
Recreation	3.3	3.4
Medical and death expenses	3.6	3.8
Private education	.3	.3
Miscellaneous	5.6	5.3
Religious and other nonprofit organizations	1.2	1.1
Foreign travel, net	1.2	1.3
Personal business	3.3	2.9
Total, percent	100.0	100.0
Total, mil. \$	687	928

SOURCE: *Net Income and Gross Product, 1950-1954*, Bureau of Economics and Statistics, (undated).

NOTES ON THE DATA: The classification employed in this table is that of the original source, and is apparently modeled on the grouping employed in Table 30 of the United States Department of Commerce *National Income Supplement*. If this is the case, "food, drink, and tobacco" include both commodity and service elements of purchased meals and beverages, and "household operation" includes in addition to the commodities and services in "house-

hold goods" in the OEEC classification, stationery, fuel and light, communications, and domestic service.

The dollar figures at the bottom of the table include sales of \$12 million in 1950 and \$26 million in 1953 by military agencies, which were not distributed among the categories shown in the table. The percentage distributions were computed on totals exclusive of such sales.

DISCUSSION OF WILLIAMS AND KRAVIS PAPERS

Patrick J. Loftus

Perhaps the most striking impression one gets from Miss Williams' paper is the enormous amount of work on this subject that is going on in many countries. Her bibliography covers 175 studies in 56 countries in the postwar years in the field of family consumption expenditures. This is a most valuable bibliography of material which, concealed in many varieties of publication, would be most difficult to find and students of the subject will, I am sure, be very grateful to Miss Williams for assembling it. The second striking impression one gets from the paper is that to find national studies undertaken primarily from the point of view of international comparisons one has to go back to prewar—and when I say prewar, I mean not the second World War but the first World War, and even the war before that in the case of the United States study, and practically to the Boer War for the British study (started in 1904 and finished in 1909). Now, Miss Williams is clearly unhappy about this state of affairs—as she is entitled to be—and I should have liked to see her analysis of the reasons for this situation

but I realize this would have taken her somewhat far afield, although into a very interesting field. It reminds one that there is a real sense in which the nations of today are less international-minded than they were in the nineteenth century or are at the start of the twentieth century. But there are more reasons—the early British and United States studies had narrow objects, such as comparisons of production costs, or comparisons of working-class welfare, which were not reconcilable with the methods used nor with the current economic concepts—e.g., the theory of value, as taught by Marshall and as developed since, gives no support to the practice of treating as economically identical commodities which, though identical in nature, are dissimilar in location or in time. Mr. Kravis quotes an example which illustrates this well, viz., bicycles, which in the United States are children's toys but in Africa are means of transport. I do not wish, in this discussion, to develop this too far, i.e., the inconsistency between the theory of value and the objects of the early studies, but I do wish to emphasize

that it is only in recent years that the true possibilities for international purposes of family consumption expenditure studies have become evident. Miss Williams deals with this specifically and the uses she has in mind are very different from those of the early studies.

I am sure we can all share Miss Williams' view that, for international comparisons, little use has been made of expenditure data analyzed by family size and income level. I think here the trouble is that the national material that is available just does not lend itself to such analysis. Let us look at the British study, to which Miss Williams refers. This study began as a sample, preselected by the Ministry of Labour, of over twenty thousand families; data were ultimately collected from twelve thousand families, but this number was further restricted, for analysis, to two thousand by taking only those who supplied annual data on clothing and four-weekly figures for other items. Nicholson, for his calculation, could use only 828 families, which he had to separate into 124 in London and 704 in the rest of Great Britain for separate analysis. There is little doubt that the representative nature of the sample had been lost by this time; and although Nicholson was able to draw many useful conclusions from the data for national purposes, their usefulness for international comparisons, when subdivided by size of family and expenditure level, was not very great. Yet this material was of better quality than many of the surveys that are available nationally. In view of the inadequacy of the data for direct intercountry comparisons, study should be given to the usefulness of derived statistics, such as measures of income elasticity of demand for given categories

of goods and services. Such measures may prove more useful for international comparisons than data expressed in value terms and may permit the discernment, between countries, of economic identities that the present commodity and value comparisons cannot reveal.

We may, therefore, conclude that although there is a great need for internationally comparable data on costs of equivalent levels of living, very little can be done in this field because the quality of the data at present available does not stand up to the analysis that is necessary for intercountry comparisons. Nevertheless, I consider Miss Williams' conclusion is unduly pessimistic. It is not inconceivable that with adequate preparatory work a number of countries could be persuaded to co-operate in a series of sample studies designed to provide internationally comparable data. This has already been done in certain fields of statistics, such as population censuses and international trade. Family expenditure studies have lagged behind but with the resources now available for internationally co-operative work the prospects for improvement in the future are surely brighter than Miss Williams thinks they are.

When we turn to Mr. Kravis' paper, we are immediately struck by the wealth of information he has succeeded in assembling. Having seen the difficulties and the inconclusive nature of the results of individual family expenditure studies with which Miss Williams deals, we are tempted to embrace the macroeconomic approach of Mr. Kravis with the feeling that we have at last outshone the darkness of the night that surrounds the family expenditure studies.

WILLIAMS AND KRAVIS PAPERS

With the same boldness and ingenuity that characterized his study with Gilbert, Mr. Kravis has got together consumption expenditure data for a large number of countries and shown quantitative relationships among them in time, in space, and according to a functional relationship. Because of the limitation of the data, the full vigor of his analysis can only be given to the economically developed countries and this involves difficulty because it limits the range of the differences he finds. Looking at the full series of countries and periods he has arranged, one is struck by the enormous range of variation in the proportion of expenditures devoted to each category. The positive conclusions he arrives at will satisfy all of us by the weight of evidence he produces.

Mr. Kravis feels that changes in a given relationship that occur both intertemporally and internationally are more certainly the effect of income differences, but even here he thinks the change in total income and the change in the consumption component may not be causally linked. I don't think this matters and that he has done enough when he has established, and indeed quantified, a functional relationship, between the changes in the aggregate and the changes in the components. When he summarizes the data by interquartile ranges of total consumption and food consumption, he gets an inverse functional relationship that it would be extremely useful to develop for empirical use in planning economic development, at least for countries that lie around the first and fourth quartiles, i.e., for economic development studies in countries with total consumption per head in the region of \$200 and other

studies in countries around \$800, the latter being mostly developed countries.

In his analysis of consumption differences in dollar terms, he is confined to the five countries that were the subject of the Gilbert-Kravis study. He finds that the differences in consumption between the European countries and the United States are concentrated in the groups clothing, household goods, and autos, which together account for 40 to 60 percent of the difference in dollar terms. This is extremely interesting information in itself but it also tends to confirm the basic proposition concerning the inverse correlation of total expenditure with food expenditure, i.e., the direct correlation of total expenditure with expenditure on clothing, household goods, and autos is the other side of the same picture, demonstrated independently.

Mr. Kravis' index of similarity—which I think, from the way it is presented, with zero meaning identity and 100 meaning complete heterogeneity, would be more easily understood as an index of dissimilarity—is an interesting index that I feel would have been greatly improved if it could have been based on a classification in which the value of the components were not so unequal; this is a limitation that Mr. Kravis clearly notes.

When we reach Mr. Kravis' conclusions, we find him confronted with the fact that the changes in consumption that he has exposed and has with some success measured within certain limits are small. He is confronted with the fact that although there has been enormous economic development in the periods considered and as between the countries he deals with, yet the differences in consumption are slight. This

leads him to wonder if his classification has not been calculated to expose the truth. I do not think this is the trouble, nor do I think it is because the consumer stands by while his tastes, habits, and expenditures are decided for him by forces on the production side that he does not understand. I think he was nearer to the solution when he was speculating on the reason why, with unchanged total consumption per head, Japan showed an increase in food expenditure from 39 percent in 1930 to 56 percent in 1953. I think the reason for this is likely to be the same as the reason why United Kingdom food, drink, and tobacco expenditure increased by 4 percent between 1938 and 1950, while total consumption per head remained unchanged. I think the same reason again explains the fall in domestic service in the United Kingdom—for example, from a figure of over 3 percent for about a generation to less than 1 percent in 1950. The reason, I think, is that the averaging of con-

sumption over the whole population, while extremely useful and valuable, as Mr. Kravis' results show, nevertheless conceals many changes of much larger dimension. Economic development changes not only the quantities and the prices but also the distribution of incomes and, while the rich get relatively less rich and curtail certain kinds of consumption, the poor get less poor and consume more of the same kinds. The range between the top incomes and the lowest incomes is likely to narrow. It is of as much importance to know not only what kinds of consumption have increased or diminished, as the kinds of consumption switched between given income groups; and this is where we come back to Miss Williams' approach. It is necessary to have studies of consumption for given income groups to supplement and explain the relatively small movements exposed by the macroeconomic methods, and I hope that the two approaches will be encouraged in every possible way.

IMPACT OF LONG-TERM STRUCTURAL CHANGES ON FAMILY EXPENDITURES: 1888-1950¹

Eleanor M. Snyder

INTRODUCTION

The purpose of this study is to examine secular changes in consumption functions derived from cross-section surveys of urban families in the United States. National survey data are available for a time span of more than sixty years—from 1888 to 1950. Measured in current dollars, during this period the level of spending for current consumption rose significantly at all levels of income; across the income scale the increase in expenditures averages about \$700 per family.

The over-all change in expenditure level, as shown by the cross-section data, did not take place as a steady upward movement consistent with either the change in income or retail prices. Moreover, the net change, over the entire 62-year period or from one survey period to the next, is a composite of varying rates and directions of change in the level of expenditures of the major com-

ponents of the total consumption budget. It is evident that a simple relation between total consumption expenditures and changes in income and price levels does not exist. The economic milieu at a given time comprises a complex matrix of factors that differentially affect family expenditures for the various categories of consumption. In particular, average consumer response to income and price change varies significantly between consumption categories. Food and housing expenditures respond to both income and price change. Some of the smaller subgroups, such as personal care, show little or no response to either an increase or decrease in price. Others—the home furnishings and equipment group, for example—apparently possess a high price elasticity of expenditures.

Although there are innumerable (and, in some cases, immeasurable) factors that affect consumer demand, it may be possible nevertheless to isolate a relatively small number susceptible to

¹ This paper was developed from analyses of consumer expenditures carried out in the Prices and Cost of Living Division of the Bureau of Labor Statistics for the revision of the Consumer's Price Index, under the direction of Edward D. Hollander and Dorothy S. Brady.

quantitative measurement which will account for many of the observed secular changes in consumption expenditures of urban families. The assumption of the existence of a consumption function that explains secular changes is based on an underlying stability in family patterns of spending; deviations in the basic pattern then occur in direct response to specified changes in the economy. Since a secular change in the level of total expenditures for consumption goods and services is an accumulation of the changes that occur in the level of expenditures for major categories (or subgroups or individual items), it seems logical to assume that changes in the level of total expenditures can be accounted for only by measuring the variation in the components. Otherwise, an unrealistic assumption of rigid proportionality is required.

The tentative findings described in this report suggest that income-expenditure data derived from cross-section family budget studies can be used to develop forecasts of the effect of changes in income (and price) on levels of family spending for major categories of consumption. Graphic presentation of the relationship, in current dollars, between money income and the specified expenditure groups illustrates surprising stability over the eight surveys conducted during the 62-year period 1888-1950. Such changes as have taken place are reflected in secular differences in the level of spending rather than variation in the form of the income-expenditure relationship. The tests that were undertaken in an attempt to discover the causes of the observed variation were largely exploratory in nature. No attempt was made to introduce the many refinements of measurement that would be necessary in the development of

secular functions sufficiently reliable for use in forecasting models. Similarly, the investigation was confined to a study of the effects of only a few variables. Further analysis might well lead to a more complete explanation of the secular differences shown by the cross-section data.

Aggregation of the cross-section functions would provide a forecast of total consumption expenditures of the urban sector of the economy, as well as aggregate expenditures on the major categories of consumption. Estimates thus obtained could be correlated with estimates based on time-series data. The analysis described here does not extend to this final step of aggregating to a global estimate. As stated earlier, the primary purpose of this analysis is to suggest that the impressive array of cross-section data assembled in this country during the past sixty-five years represents a powerful analytical tool in studies of income-consumption-saving relationships. Dorothy S. Brady, for example, has pioneered in the effective utilization of these materials in the course of her own extensive research in this area. By simply including on a single chart the family income-expenditure averages (by income class) derived from successive surveys, secular changes (or lack of change) are clearly shown. To the extent that such changes as are evidenced can be explained by variation in other measurable factors, the cross-section material will be increasingly useful in forecasting changes in the level of consumption and saving.

SOURCES OF DATA

The statistical materials utilized in this report are based partly on published, but largely on unpublished,

LONG-TERM CHANGES AND FAMILY EXPENDITURES

tabulations from the urban cross-section studies relating to the following periods: 1888-1890, 1901, 1909, 1918-1919, 1935-1936, 1941, 1944, and 1950. While relatively few adjustments were made to take account of the methodological differences between the separate studies, for every survey some retabulation was necessary in order to achieve a standard definition of income and each of the major categories of consumption. Income is here defined as net money income after personal taxes. Definitions of the major categories of consumption are included as necessary in subsequent sections.

It should be noted that no adjustments were made to take account of such methodological differences between surveys as sample coverage, the definition of the family unit, methods used in the data collection, etc. Such differences are partially responsible for the observed variation between surveys in the income-expenditure relationships under study.

Distributions of family expenditures, by net money income class, as well as the sources of the data as originally published, are given in the Appendix.

Average expenditures and income, per income class, as calculated from the various surveys conducted during the period 1888-1950, form the empirical base of the analysis. Neither income nor expenditure is corrected for changes in prices; they are stated in the dollar figures as given in each survey.

SECULAR VARIATION IN PATTERNS OF URBAN FAMILY EXPENDITURES, 1888-1950

I. FAMILY EXPENDITURES FOR FOOD

Secular changes in the level of family food expenditures appear to be a stable

function of variations over time in family size, income, and retail food prices. During periods in which incomes and prices are rising, a portion of the income change is taken up by an increase in outlays for food; on the average, however, consumer resistance to increasing food prices reaches a peak somewhat below the full measure of the price rise so that the relative increase in family food expenditures is slightly less than the relative rise in either income or food prices.

The functional relationship can be expressed by an equation of the form

$$y = kx^a p^b, \quad (1)$$

where y =average food expenditures standardized for family size, x =net money income, p =the Consumer's Price Index for food, and the exponents a and b are measures of the expenditure elasticities of income and price, respectively.² Fitting the equation by the method of least squares to the survey data yielded both income and price elasticities of about 0.5.³ Inserting

² Average food expenditures per income class were standardized to a family size of 3.5 persons by use of the following equation, which expresses the relationship between the cube root family size and the average family size as reported:

$$y = .8731 + 1.138 \log x,$$

where y is the cube root family size and x is the average family size as reported. This empirically derived relationship was developed by Dorothy S. Brady and Helen A. Barber in their report, "The Pattern of Food Expenditures," published in the *Review of Economics and Statistics*, XXX, No. 3, August, 1948.

The Consumer's Price Index (1935-1939 base) was used as a price deflator for all years from 1918 forward. For the earlier years, the Douglas index was linked in. See "Real Wages in the United States, 1890-1926," Paul H. Douglas.

³ Income elasticities of food expenditures calculated from over three hundred cross-

$\frac{1}{2}$ as the value of the exponents a and b in equation (1), and solving for k , the average calculated value of the intercept k exhibits considerable stability over the period 1888-1950, considering the differences in survey methodology and population coverage of the eight national cross-section studies used in this report, and the approximate nature of the estimation procedures. The values of k calculated for each income class from these eight national surveys are summarized in Table 1.

and that if the data could be adjusted for such variation greater stability would be observed in the secular function. (It appears that methodological and other variations, such as they were, operated quite uniformly across income classes; for each time period, variations in the values of k by income class appear to be randomly distributed.) The lower values of k calculated from the 1888 and 1918 surveys may result, for example, from the fact that the 1888 data are based on what the surveyed

TABLE 1. Calculated Values of the Level Term k of the Food Equation
 $y=kx^{\frac{1}{2}}p^{\frac{1}{2}}$, 1888-1950 by Income Class^a

	1888	1901	1909	1918-19	1935-36	1941	1944	1950
	12	11	12	11	14	11	21 ^b	15
	11	12	13	11	12	12	15	13
	12	12	14	11	12	13	15	14
	11	13	15	11	12	13	15	14
	11	13	15	11	13	14	15	14
	10	13	14	11	13	15	15	14
	9	13	15	12	13	15	15	14
		13	16		13	15	14	15
		13			13	15	13	14
		13			13			
		13			13			
		12			12			
Simple average	10.9	12.6	14.2	11.1	12.8	13.7	14.6	14.1

^a In this equation, all values except k are known; family food expenditures (y), net money income (x), and the BLS Consumer's Price Index for food (p). Estimates of k can thus be obtained directly, for any point on the x, y , plane, by dividing expenditures by the product of the square root of income multiplied by the square root of the food price index appropriate to the particular survey period. The table shows values of k as calculated from the average expenditures and income per income class. For each survey date the income classes for which the values of k are given are ranked from low to high; the average income per class and date, and the corresponding averages of food expenditures are given in Table 5 of the Appendix.

^b Not included in the unweighted average.

Summed across all income classes and all survey dates, the average value of k is 13. It seems probable that some of the apparent variation between dates stems from methodological differences

section family budget studies (of individual cities, at different dates) yielded an average value of 0.54. The average measure of the price elasticity of food expenditures, as estimated by graphic inspection, also appeared to be about 0.5.

families regarded as their "normal" expenditures, while in the 1918-1919 study, families were asked to estimate annual expenditures for each food item. Many statistical investigators believe that this type of global question (particularly when applied to items purchased frequently but in small quantities) leads to an understatement of the total. The 1909 survey, by contrast, for

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which the k values are above average, obtained weekly expenditure data; annual estimates are simply the weekly figures multiplied by 52.

The small secular drift toward higher levels of food expenditures at identical levels of income, as indicated in Table 1, may result solely from differences in survey procedures defining the basis of accepting or rejecting completed family schedules in terms of the internal balance between reported receipts and disbursements. The trend since 1928 in survey methodology has been toward broadening the range of error accepted in the balance of accounts, and to move away from efforts in the field to bring schedules into balance by return visits to the family. In an unpublished analysis of the sections of the family schedule that were "revised" when interviewers made return calls to families in an attempt to bring the total family record to a closer balance between total receipts and disbursements, Dorothy S. Brady reported that the estimated total for food expenditures was most often revised by the housewife. In the majority of cases, the adjustment was downward. The trend since 1935-1936 in relaxing efforts to achieve a trial balance in the field could thus be reflected in an upward shift in the level of reported food expenditures.

The extent to which secular changes in the level of family food expenditures are explained by a crude fit of equation (1) is shown graphically by a comparison of Charts A and B. Chart A shows in current dollars the regression of food expenditures (y) on net money income (x) of urban families, by income class, for each survey date from 1888 to 1950. Chart B shows the transformed regres-

sions; the y -axis gives food expenditures standardized to a constant size of family (3.5 persons) and deflated by the Consumer's Price Index for food taken to the 0.5 power—i.e., the price elasticity of family food expenditures on income is assumed to be 0.5. On the x -axis appears net money income to the 0.5 power—assuming an income elasticity of 0.5. If the transformation equation (see equation 1) completely explained the variation in the food expenditures-income relationship shown between the data for the various survey dates (Chart A), on Chart B the separate curves for each period would merge so that the observation points from the seven survey periods would lie along a single curve.

It is of some interest to note that the relationship between total food expenditures and expenditures on certain food subgroups appears to be simpler than the relationship between total food expenditures and income. The meat, poultry, and fish group, for example, and the combination of desserts and beverages display a fair amount of consistency in their relationship to the total food budget. At all income levels and at all dates for which these data are available (1935-1936, 1941, 1944, and 1948) the meat group takes about 30 percent of all expenditures for food; desserts and beverages represent about 14 percent of the total. Similar proportions have been observed in average consumption patterns recorded in other countries. In such diverse money economies as the British West Indies (Barbados), Norway (Oslo), and France (Marseille), the proportion of food expenditures allocated to the meat group is of the same order of magnitude: 26 percent, 29 percent, and 29

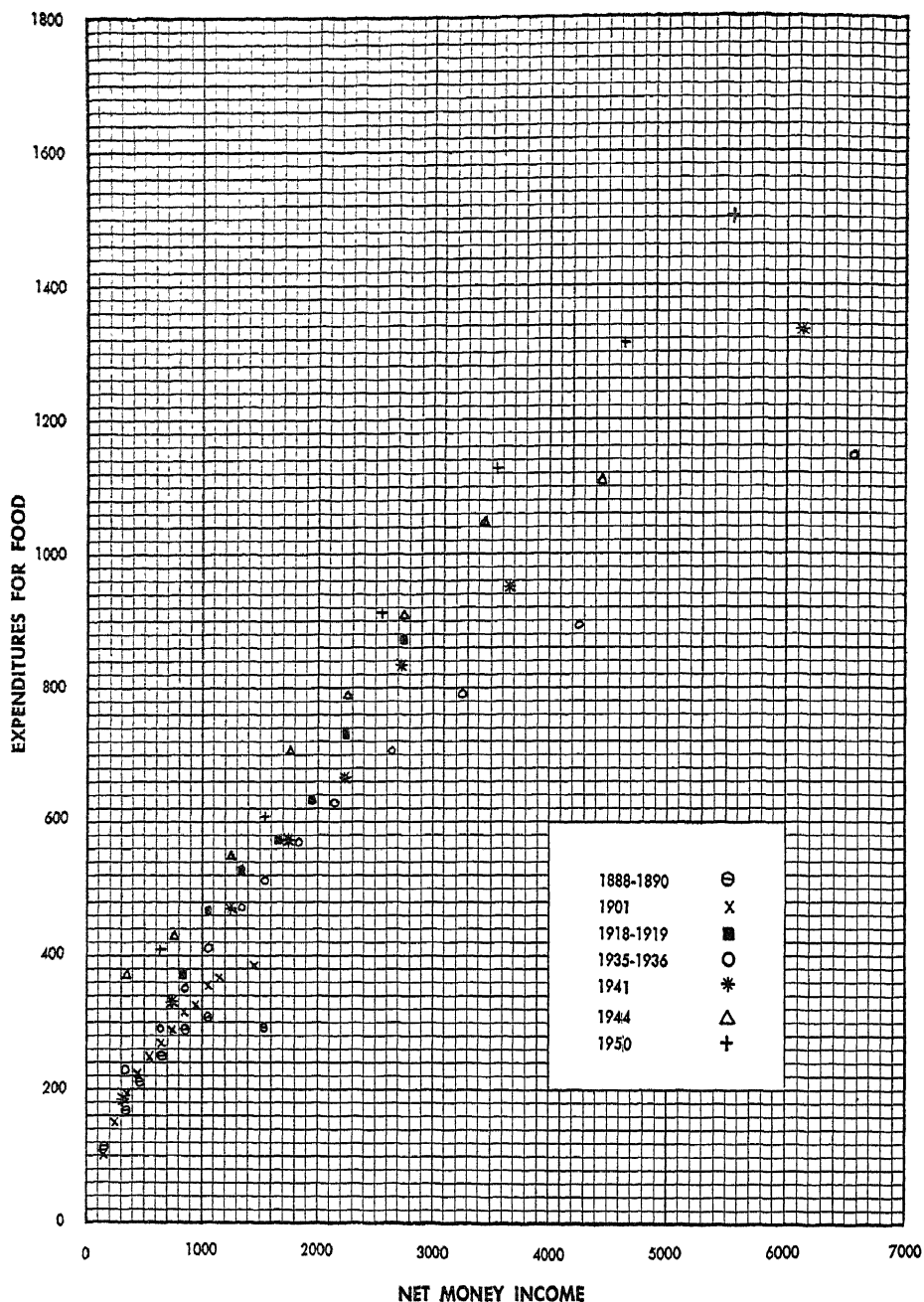


CHART A. Average Expenditures for Food and Net Money Income, by Income Class, Urban Families, 1888-1950 (in Current Dollars).

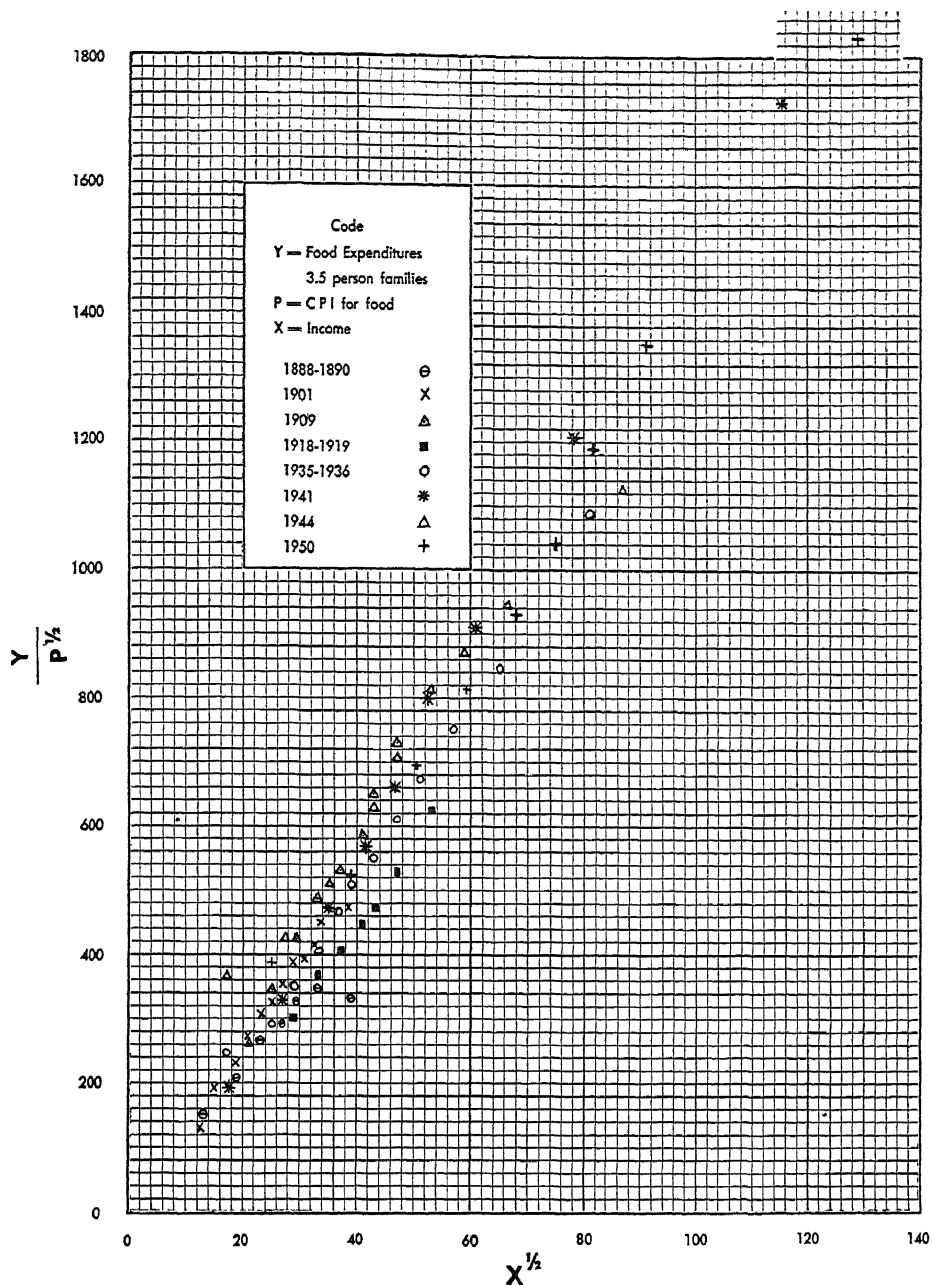


CHART B. Family Expenditures for Food and Family Incomes, Allowing for Influence of Food Prices and Incomes, 1888-1950 (by Net Money Income Class).

percent, respectively.⁴ Sweets and beverages represented 13 percent of total food expenditures in Barbados, compared to 14 percent in the urban United States. (It was not possible to obtain comparable subgroups in the Oslo and Marseille studies.)

If the relationship of expenditures on these particular subgroups and total food is a stable secular function, it follows that consumer response to changing food prices operates at two levels. The primary response, in terms of changing levels of total food expenditures, is limited by a function of the type described by equation (1). Second, regardless of the extent of the change in average prices of the two specified subgroups of food items, the change in average family expenditures for these subgroups will be limited by the simple relationship

$$y = a(kx^{\frac{1}{2}}p^{\frac{1}{2}}), \quad (2)$$

where y = expenditures on the specified food subgroup, and a is a multiplier of equation (1).

Further empirical tests may possibly invalidate the assumption of secular stability in the relationship between total family food expenditures and expenditures for the two subgroups, meats, etc., and sweets and beverages. The four national cross-section studies for which the expenditure details were

available, however, cover a thirteen-year time period during which food prices doubled and per capita income increased by more than one and a half times, and which spanned a war period when rationing and price controls disturbed the normal relationships between supply and demand. It would be helpful to examine the expenditure relationships during periods of falling prices; the national cross-section studies, unfortunately, will not provide such an opportunity since they uniformly relate to periods of rising prices.

Assuming for the moment that secular variations in food expenditures may be explained by the types of relationship described by equations (1) and (2), such stability gives rise to some interesting hypotheses and questions. At a constant level of income, measured in current dollars, the percentage distribution of expenditures on food and other major categories of families of a given size thus shifts from time to time in accordance with definite patterns of consumer response primarily to changes in the level of prices. Since it seems that cross-elasticities of expenditures on the major consumption groups are not stable, they need not be taken into account in building forecasts of future levels of consumption.

Although the hypothesis that certain food subgroups are a constant proportion of total food expenditures must be subjected to further testing, the assumption of stability leads to speculation as to why similar stability is not found among the remaining subgroups. It is possible that the standard classification plan now in common use is responsible; other, probably broader groupings may reveal greater secular stability in the distribution of the food budget.

⁴ The sources of these estimates are as follows: Barbados: *Social and Economic Studies* (Institute of Social and Economic Research, Jamaica, B.W.I.), I, No. 4, August, 1953; Oslo: *Husholdningsregnskaper* (Statistisk Sentralbyrå, Norges Offisielle Statistikk XI, 23, Oslo), May, 1947-April, 1948; Marseille: *Bulletin de l'Institut National d'Hygiène*, VIII, No. 3, July-September, 1953. By occupation group, the percentages are: 29 percent, 27 percent, 31.5 percent.

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Changes in the physical consumption of food items may be considered to be governed by a system of checks and balances in which the consumer, in the role of ultimate purchaser, exerts constant pressure on the market toward maintenance of a stable relationship between prices of broad food commodity groups. Relative demand for meat, at a constant level of income, for example, declines if meat prices rise more rapidly than prices of other groups or, if the total quantity of meat purchased is to remain unchanged, there must be a compensating shift in the distribution between low- and high-cost meat items.

II. AVERAGE FAMILY EXPENDITURES FOR HOUSING (EXCLUDING FUEL, ELECTRICITY, AND REFRIGERATION)

The form of the relationship between current housing expenditures and current family income appears to be about the same at each of the survey periods examined. Secular changes show up primarily as variations in level of housing expenditures at the same income levels, measured in current dollars. As in the case of food, average income elasticities of housing expenditures were calculated from cross-section family budget studies conducted in individual cities at various dates between 1888 and 1950. Income elasticity, averaged across cities and dates, equaled about 0.5 in a sample of approximately 200 city surveys. The variation between cities at a given point in time, however, as well as the variation in a given city at different dates, was greater for housing expenditures than for food expenditures, probably owing to the greater importance of local factors in the income-housing-expenditure relationship.

It is of some interest to observe that the average response of urban consumers to changes in price and income appears to be about the same for both housing and food. Thus, the functional relationship between average family expenditures for housing (fuel, light, and refrigeration excluded) may also be described by an equation of the same form as equation (1),

$$y = kx^a p^b,$$

but where y =average family expenditures for housing, x =average net money income, and p =the Consumer's Price Index for housing. The average income and price elasticities of housing expenditures (exponents a and b in the above equation) seem to be about 0.5, the same as for food.

A comparison of the spread, on the y -axis, of family housing expenditures shown on Charts C and D indicates the extent to which equation (1) explains the secular variation in level of housing expenditures. Chart C shows average family income and housing expenditures in current dollars. In Chart D, housing expenditures are deflated to 1935-1939 dollars by the Consumer's Price Index for housing, taken to the 0.5 power (shown on the y -axis), while the x -axis shifts from income in current dollars to income deflated to the 0.5 power. Charts C and D are similar in presentation to the food Charts A and B. As in the case of food, price and income elasticities of expenditures are assumed to be 0.5. If equation (1) produced a perfect fit for all income classes at all dates, all points would lie on a single line. The curve for 1918 is relatively low in both charts but lies definitely below the scatter on the second chart, which indicates the extent

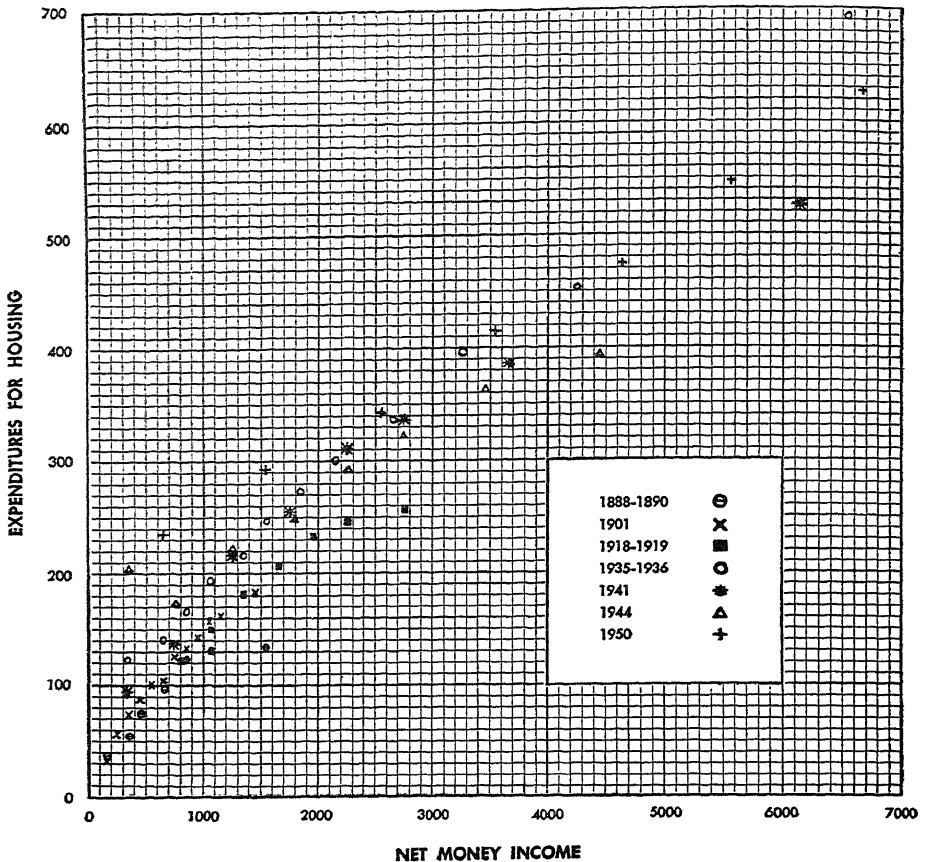


CHART C. Average Expenditures for Housing and Net Money Income, by Income Class, Urban Families, 1888-1950 (in Current Dollars).

to which the assumed relationship between expenditures, income, and price fails to explain all the secular change in housing expenditures. It is possible that the poorness of fit of the 1918 data may be due simply to the fact that this survey did not include expenditures of families whose costs of fuel, light, or refrigeration were completely or partially included in the rental bill. This sampling procedure was unique to the 1918 study.

Similarly, if the equation $y = kx^ap^b$ (assuming values of a and b of 0.5) produced a perfect transformation, the values of the level term k would be constant at all dates. The extent to which they vary is shown in Table 2. Across all income classes at all dates, the unweighted average value of k is 6.

The relationship described above between average family expenditures for housing, income, and price change apparently does not explain the secular

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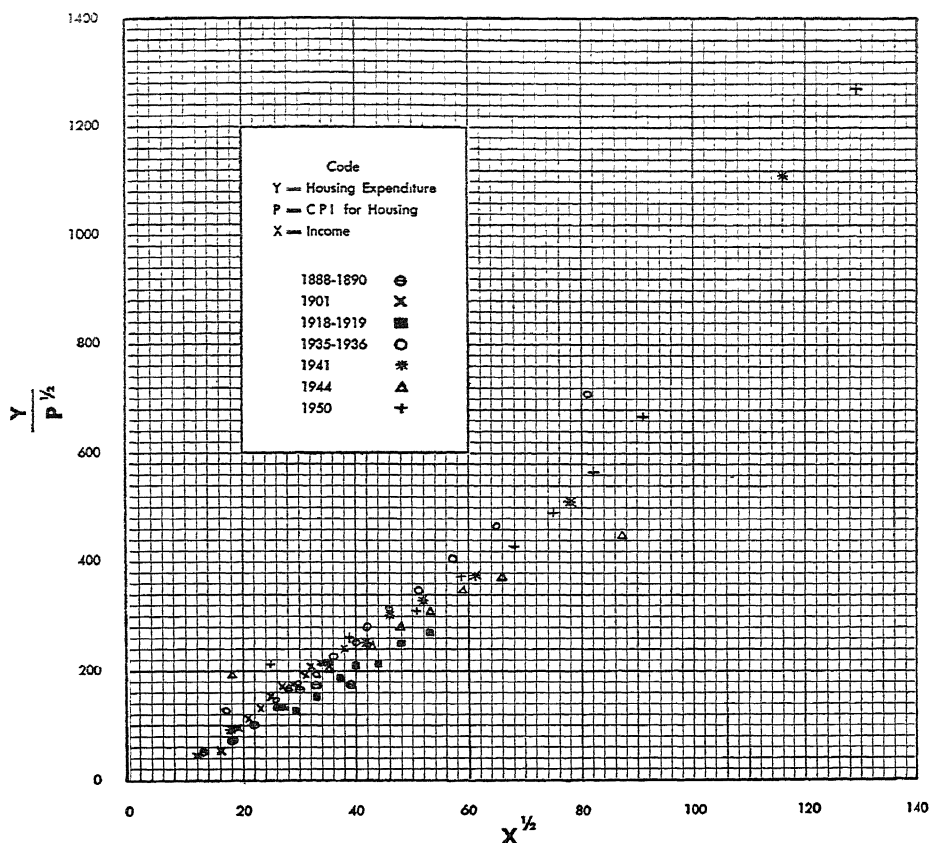


CHART D. Family Expenditures for Housing and Family Incomes, Allowing for Influence of Food Prices and Incomes, 1888-1950 (by Net Money Income Class).

variation in housing expenditures at the community level. In many, but not all, of the communities for which family income-expenditure data are available for a succession of dates, there appears to be a definite upward shift in level of expenditures between 1918-1919 and 1935-1936. Whether all of the difference observed is due to methodological variation is not known. The variation in level of expenditures between

these two survey dates is most apparent, however, in communities where the average quality of housing, as measured by the proportion of dwelling units equipped with indoor plumbing, or, in northern cities, with central heating, rose appreciably during this period. It would be of interest to compare, over time, the relative change in price of dwelling units lacking these conveniences and of the newer units so

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TABLE 2. Calculated Values of the Level Term k of the Housing Equation
 $y=kx^ap^b$, 1888-1950 by Income Class^a

	1888	1901	1918-19	1935-36	1941	1944	1950
	4	4	4	7	5	11	8
	4	5	5	6	5	6	7
	4	5	5	6	6	6	6
	5	5	5	6	6	6	6
	6	6	5	6	6	6	6
	5	6	5	6	6	6	7
	5	6	5	7	6	6	7
		6		7	7	6	7
		6		7	10	5	10
		6		7			
		6		7			
		6		9			
Simple average	5	6	5	7	6	6	7

^a Ranked from low to high. The average income and expenditures per income class appear in the Appendix tables. See Table 1, Footnote ^a, for explanation of method of calculation.

equipped. The newer, better-equipped units enter the housing market at prices above the average for existing houses lacking the newer conveniences. At any given time, therefore, the housing inventory in a given community consists of various strata of housing, measured in terms of quality and variety of facilities. The appearance of the better-equipped units apparently does not depress prices of the older units; rather, as suggested above, the better-equipped units fall into a higher price class and, following their appearance on the market, proceed along a path of secular price changes similar to that followed by other strata, but at a higher level. If, in a given community, the average quality of housing changes rather quickly in a relatively short period, as is possible when the level of economic activity and average community income rises abruptly, the upward shift in average quality of housing can be reflected by a distinct shift in level of housing expenditures across the total income distribution. This hypothesis might explain differences in secular variations in

the level of housing expenditures observed in the cross-section data for individual cities.

III. AVERAGE FAMILY EXPENDITURES FOR OTHER CONSUMPTION GOODS AND SERVICES

According to the model presented in this paper, there are no stable cross-elasticities between average family expenditures on food and housing; average family expenditures on other goods and services, however, along with savings, are competitive with each other and can be considered as the residuals remaining after the level of expenditures on food and housing has been established. The subcategories of consumption items included in the classification "Other" consist of at least two types that can be identified: those for which cross-elasticities of expenditures are not stable over time; and those that are competitive and for which cross-elasticities of expenditure can be calculated from the survey data.

As a composite bundle, goods and

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services exclusive of food and housing seem to have an average income elasticity of about 1.0. Within the total group, however, it can be shown that there is considerable variation in the response to both income and price change. Some of the subcategories will be discussed below.

A. AVERAGE FAMILY EXPENDITURES FOR CLOTHING

Secular changes in average family expenditures for clothing are partially explained by variation in the average size and composition of family and in the levels of income and price. Chart E

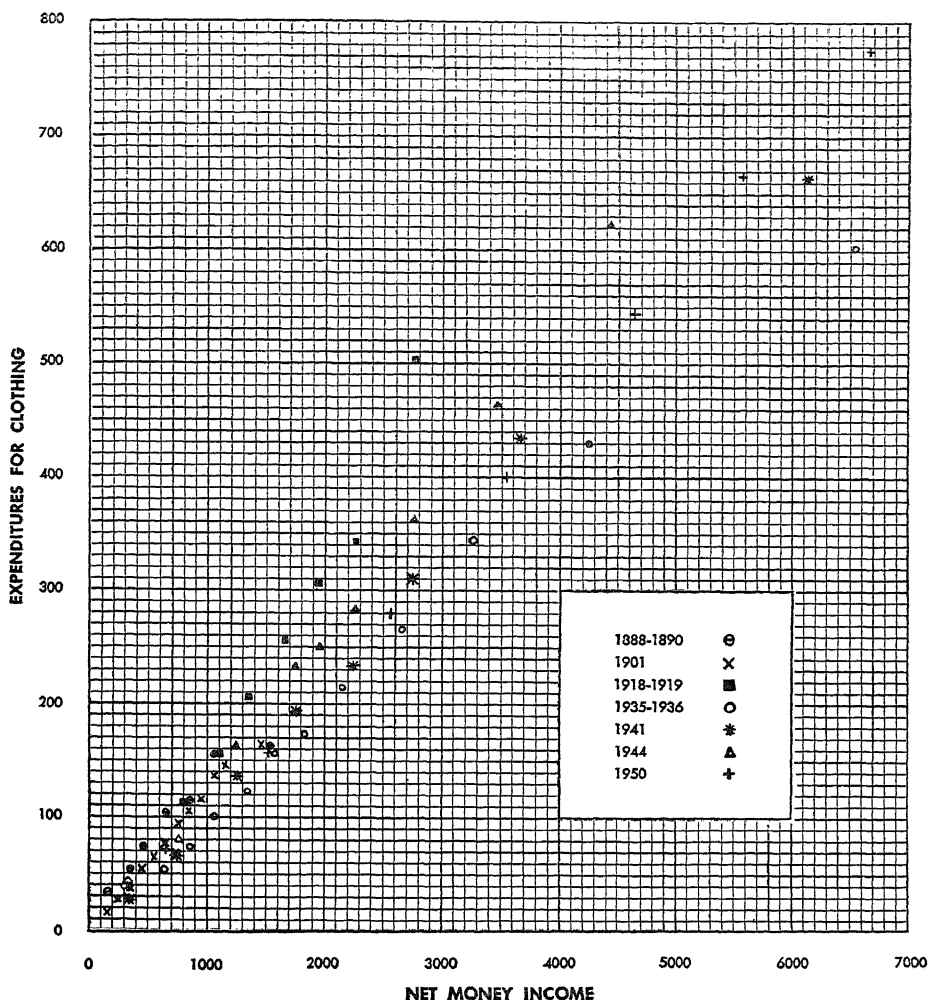


CHART E. Average Expenditures for Clothing, Urban Families, 1888-1950 (in Current Dollars).

shows, in current dollars, average family clothing expenditures and net money income from 1888 to 1950. The changing composition of the average family, in terms of the distribution by age and sex, is of particular importance in accounting for the differences in clothing expenditures observed in the cross-section data relating to the period 1888-1950. Family size changes, taken alone, possess less significance; converting expenditures to a per capita basis, as in Chart F, does not significantly minimize the scatter. For four of the cross-section surveys, however, it was possible to take some account of changes in family composition; for the 1918-1919, 1935-1936, 1941, and 1944 studies, average family expenditures on men and boys', and women and girls' clothing could be compared.* As Charts G and H illustrate, even this crude method of standardizing for differences in family composition indicates that this factor is of some importance in explaining secular variations in average family spending on clothing. The relatively low level of men and boys' clothing expenditures in 1944 undoubtedly is a reflection of the abnormal age distribution caused by the fact that many of the younger and middle age groups were in the armed services during the survey period.

While income and price elasticities of clothing expenditures have not been calculated, there is some indication that the average family is unwilling to absorb, during periods of rising prices, all of the increase in clothing prices. Chart F shows that in constant dollars the level of family clothing expenditures has declined since the period covered

by the earliest surveys, 1888 and 1901. Income elasticity probably is less than unity, but may be higher than price elasticity of expenditures. Although these values have not been calculated for this report, the preliminary explorations undertaken suggest that it is possible to construct secular functions for clothing as well as for food and housing. In the case of family expenditures for clothing, however, it may be necessary to take into account cross-elasticities between retail prices of clothing and other groups of consumption goods and services.

B. AVERAGE FAMILY EXPENDITURES ON SELECTED SUBCATEGORIES OF CONSUMPTION GOODS AND SERVICES

Secular variations in the level of family spending on such subcategories as recreation, medical care, education, and personal care are minimal. By and large, families at the same level of income, measured in current dollars, tend to spend a constant proportion of income on each of these groups of consumption goods and services. The response to price change therefore is most significant among individual items, with no apparent cross-elasticities among the subgroups themselves. Expenditures on other subgroups of items, such as house furnishings and equipment, for example, display definite evidence of a response to variations in the average level of prices for the subgroup as a whole.

No attempt has been made in this paper, however, to estimate functional relationships between average family expenditures for these groups of consumption services, since the primary

* Boys and girls aged fifteen (or sixteen) years and over.

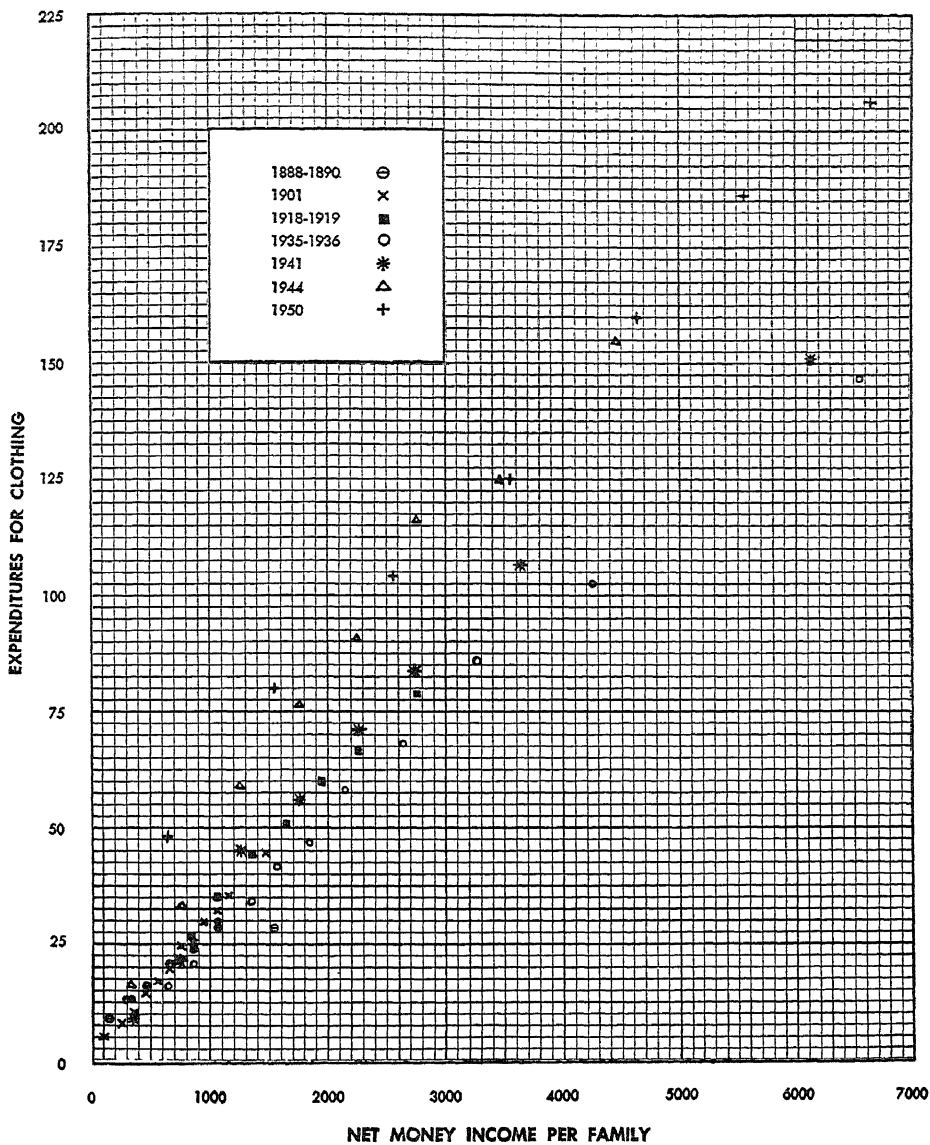


CHART F. Average Per Capita Expenditures for Clothing, Urban Families, 1888-1950 (in Current Dollars).

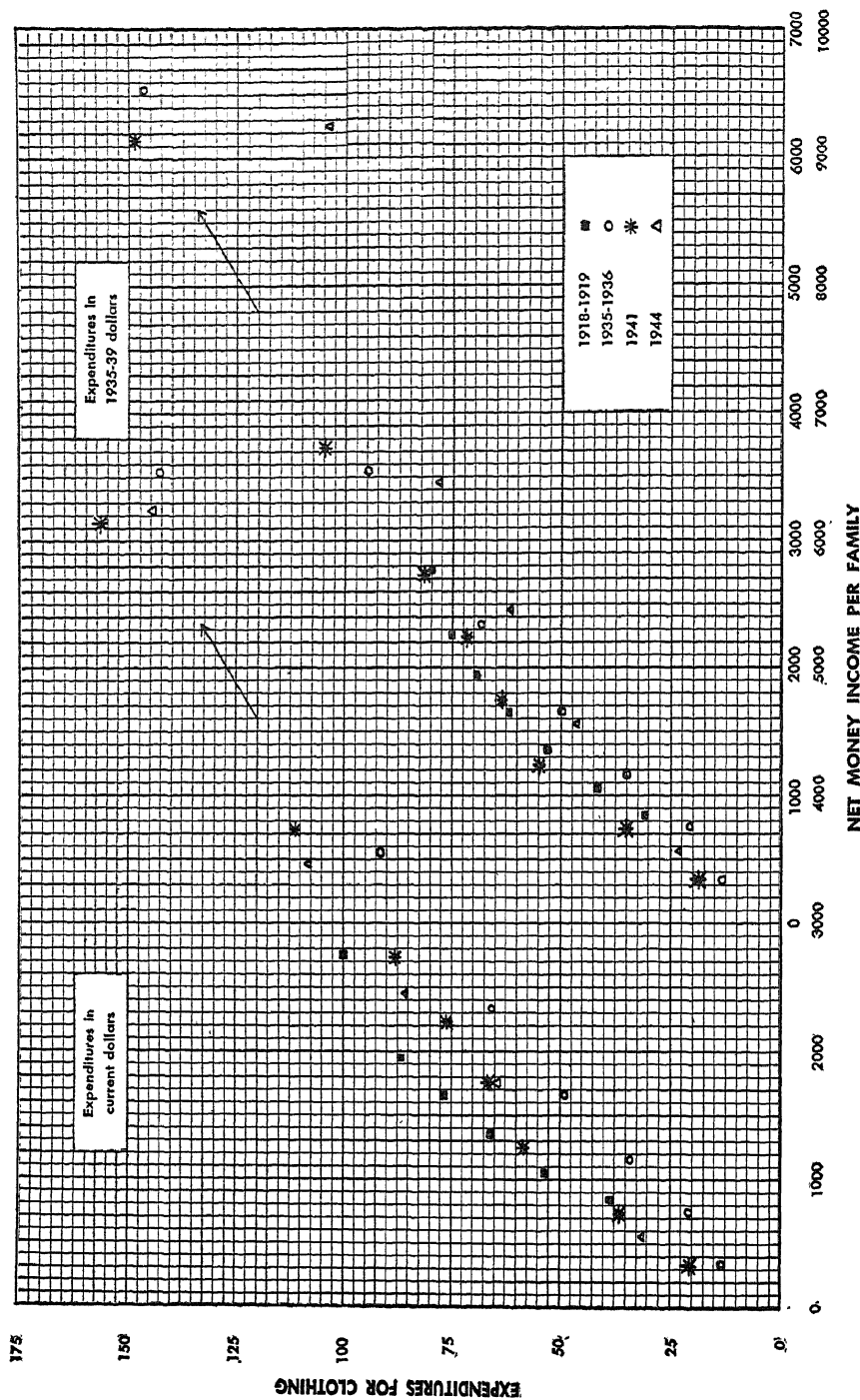


CHART C. Average Expenditures for Clothing, Men and Boys (15 Years or over), Urban Families, 1918-1944 (in Current Dollars).

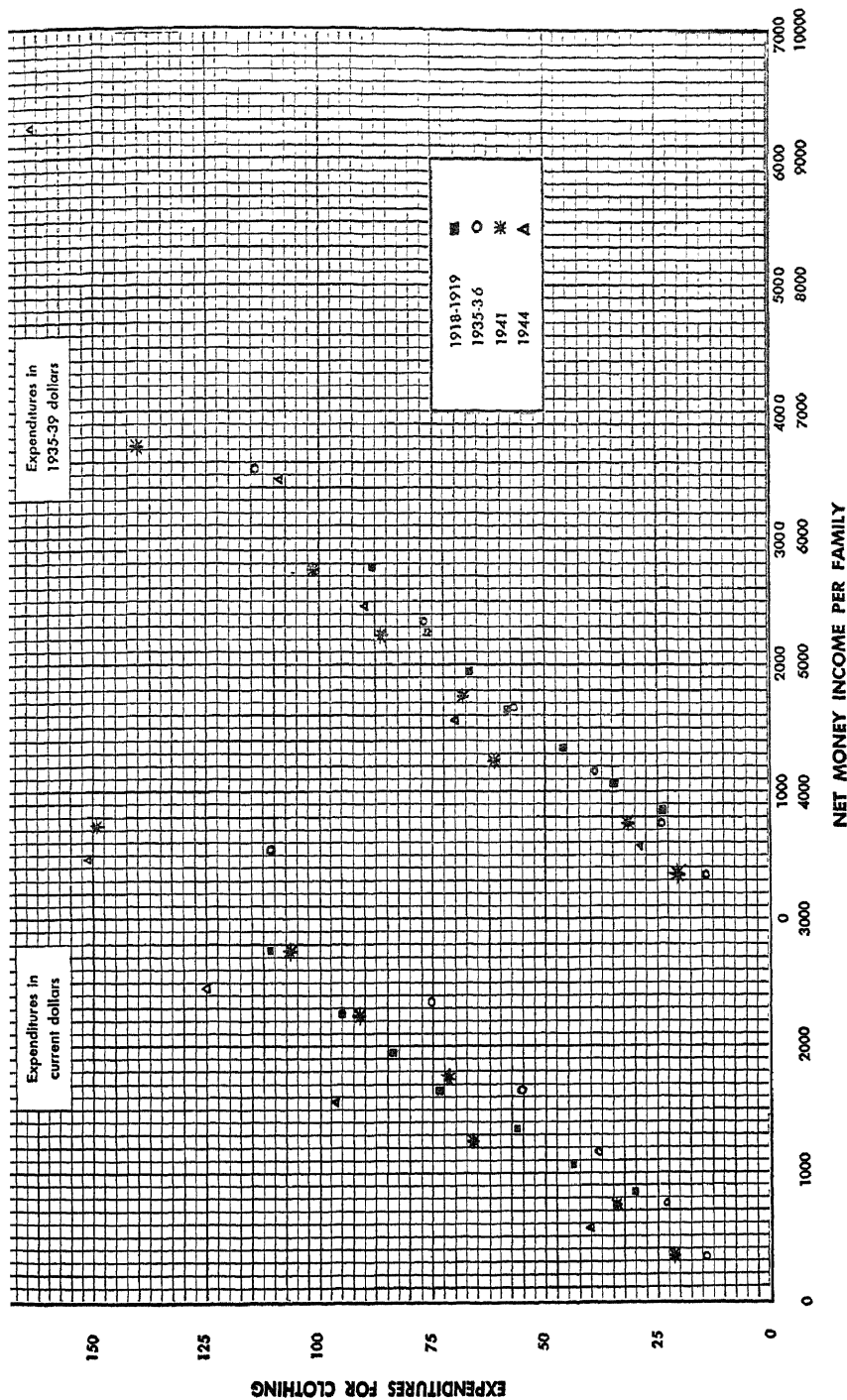


CHART H. Average Expenditures for Clothing, Women and Girls (15 Years or over), Urban Families, 1918-1944 (in Current Dollars).

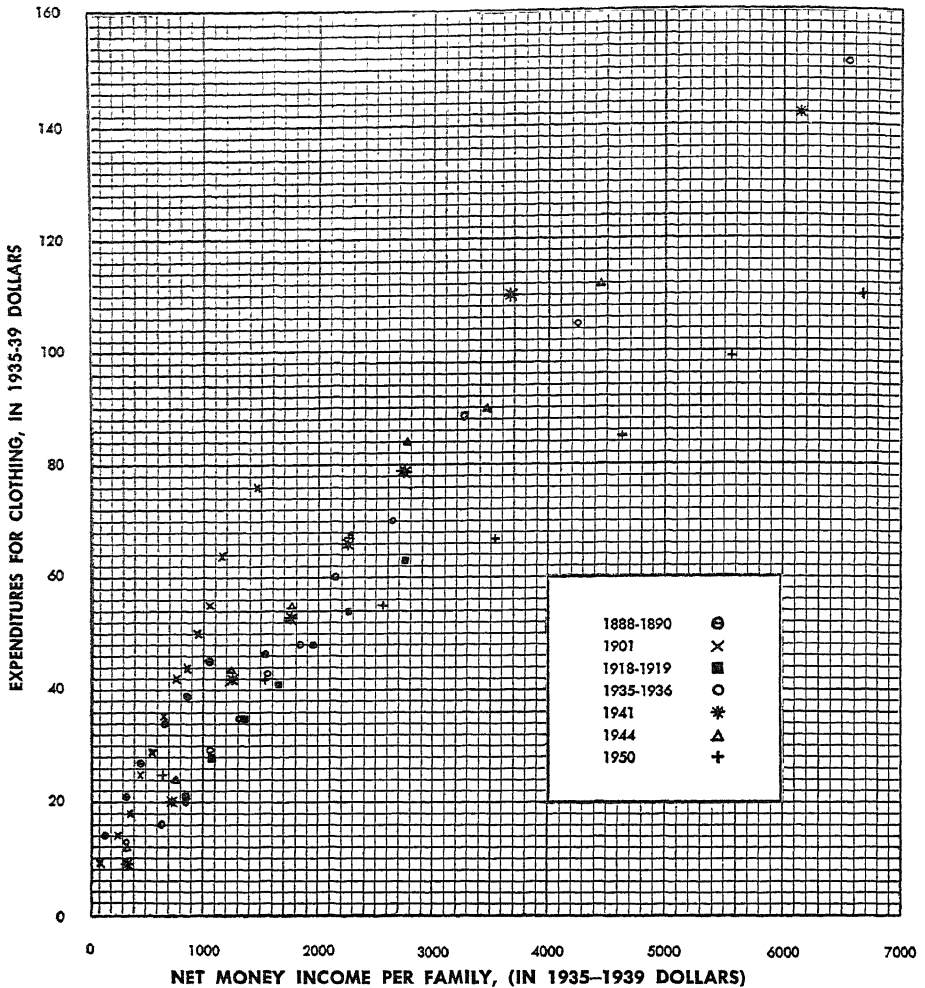


CHART I. Average Per Capita Expenditures for Clothing, Urban Families, 1888-1950 (in 1935-1939 Dollars).

purpose was to explore the tenability of the hypothesis that secular consumption functions can be derived from the cross-section data.

SUMMARY

This paper has presented a fairly simple hypothesis—that secular con-

sumption functions can be developed from the cross-section family budget studies, and that with appropriate adjustments for methodological differences in the survey data, such functions can be constructed with the degree of accuracy required for purposes of forecast levels of consumption expenditures

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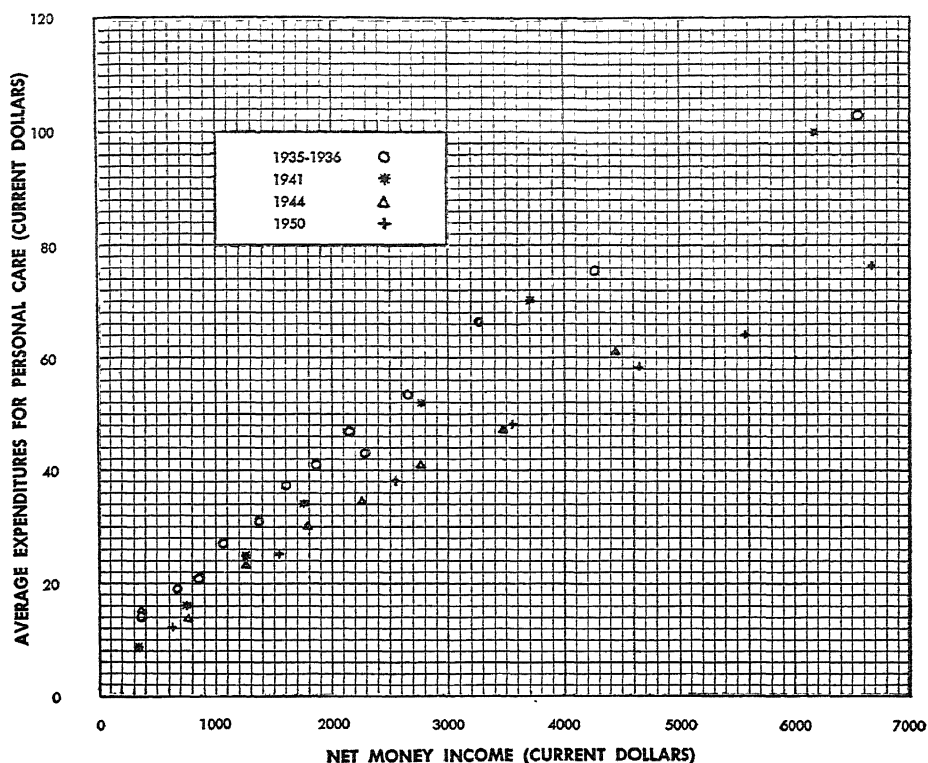


CHART J. Average Family Expenditures for Personal Care, by Income Class, 1935-1936 to 1950 (in Current Dollars).

of the total urban sector of the economy.

The model assumes that total consumption expenditures can be projected in the form of a summation of expenditures of small categories of consumption. The exploratory work described in preceding pages indicates that secular changes in food and housing expenditures, on which the analysis was concentrated, can be accounted for largely by variations in two or three factors—income; price; and, in the case of food, family size. Secular variations in other consumption groups, it is suggested,

similarly may be explained by an analysis of relatively few of the variables commonly recognized as affecting the income-consumption relationship.

This hypothesis is based upon the observation that, category by category, the family income-consumption data from a number of cross-section studies display similarity in the form of the regression. That this is true is not particularly surprising. After all, the human race is prone to the formation of habits, and it tenaciously clings to a pattern once formed; deviations from the established routine are not apt to occur as

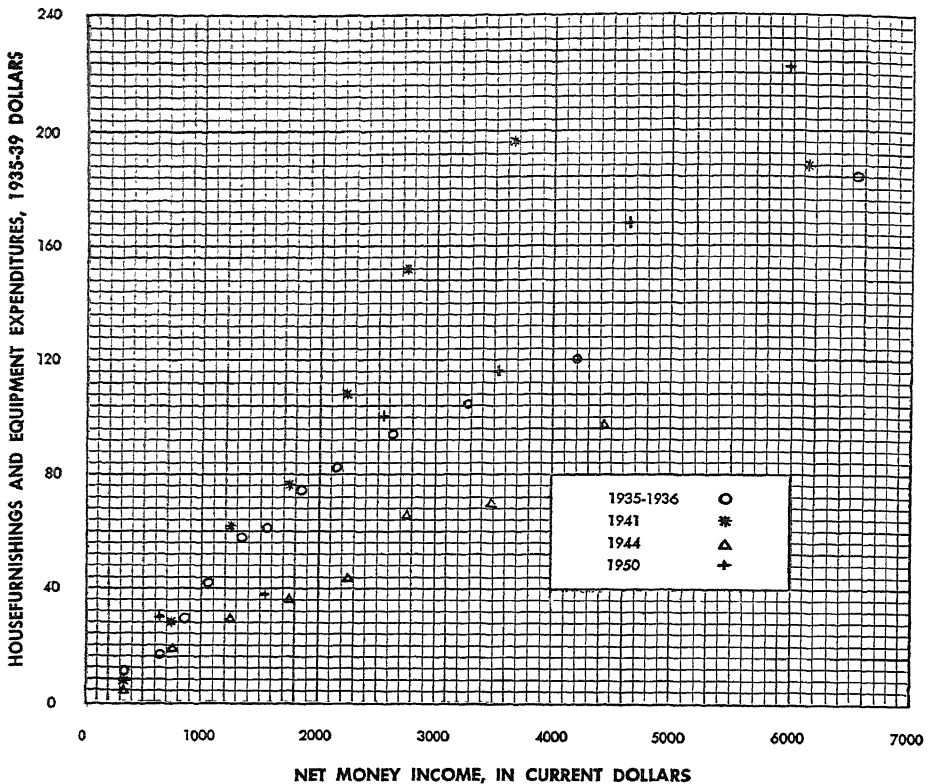


CHART K. Average Family Expenditures for House Furnishings and Equipment, by Current Income, 1935-1936 to 1950 (in 1935-1939 Dollars).

long as “everything else” remains the same.

The typical distribution of family expenditures, broadly speaking, is similar over time and space, and reappears, moreover, in the budget studies of communities scattered throughout the world. The observation that “food expenditures take about one third of the income of the average family” could apply equally well to all countries with a money economy. If deviations from a normal pattern are susceptible to quantitative measurement, as is suggested here, the process of such measurement

should yield, as additional by-products, an increase in our understanding of the complex series of interactions between factors of supply and demand, and of the relative pressures that serve to maintain or restore a balance between average prices of the various categories of consumption.

It may be supposed that the “normal” relationship between family income and expenditures by category is the pattern of consumption displayed by those whose income, in absolute terms, remains fairly constant. Because it takes time to adjust to a new level

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of income, families whose current incomes are substantially above or below the previous customary level do not spend in accordance with the average pattern displayed at the income position into which they have moved. A secular consumption function, therefore, should be based on the income-expenditure relationship displayed by the center groups of the income distribution; the extremes of the distribution are likely to be distorted, in a classification by current income, by the presence of families who are above or below their customary income level.

IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The type of model for forecasting consumption expenditures, which is described in this report, arrives at an estimate of total consumption expenditures as a summation of independently derived estimates of expenditures of the various consumption categories. It should be pointed out, however, that there are obvious constraints upon the total change in expenditures that can occur. In particular, during periods of rising prices and income, the increase in the level of total consumption expenditures is limited by the amount of increase in family income. By and large, all family expenditure surveys have shown that at the average income position families tend to equate income and expenditures. Accepting this assumption for the moment, along with the further assumption that it is possible to adjust the cross-section data for changes in all factors other than income and price change, it is possible to illustrate graphically the maximum limits

of the relative effects of income and price change.

Figure 1 illustrates the case where income rises more rapidly than prices. In period one, total expenditures (Y_1) equal current money income (X_1); in period two, prices rise by amount P so

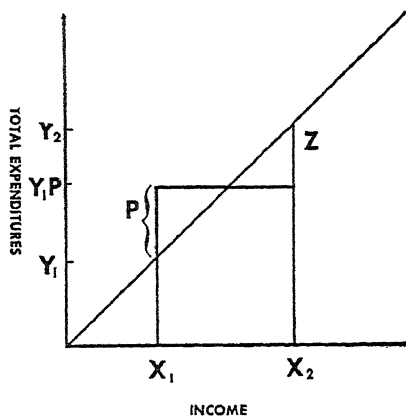


FIGURE 1.

that the new price of the budget increases to Y_1P , and income increases to X_2 . P measures the effect on the level of total consumption expenditures of the price advance, and Z the increase in expenditures resulting from the income increase. The new level of expenditures equals X_2 .

Figures 2 and 3 respectively depict the situation where prices increase more rapidly than income, and where the relative decline in the average retail price level is the same as the decrease in income.

The hypothesis has been presented that average family food and housing expenditures are of the first order of necessity, among the items included in the family budget, and that in periods of changing income and price levels, the new level of expenditures on these two

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$$y = kx^ap^b,$$

categories is established independently, to the extent that neither is a determinant of the other. All other consump-

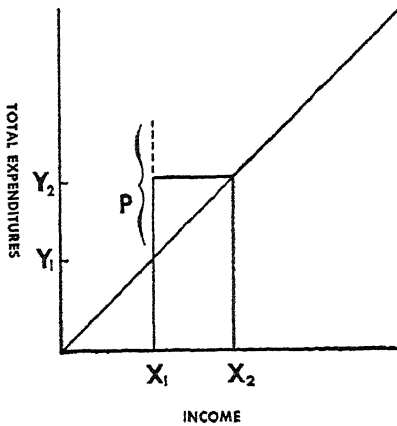


FIGURE 2.

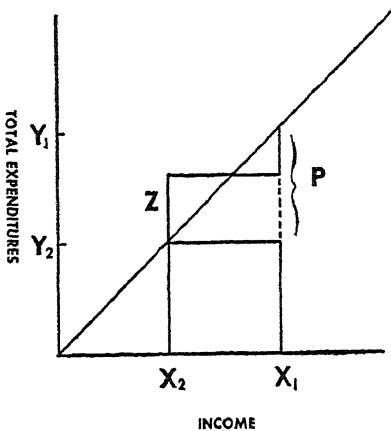


FIGURE 3.

tion groups and savings (or dis-savings) are combined into a residual classification and, hence, the new level of this bundle of items is dependent upon the total change in food and housing expenditures. If the general price level rises sufficiently faster than the average increase in family income, then savings or expenditures on items other than food and housing must give way. The

the relative constancy in the value of the level term k , for both food and housing, must mean that during the periods of observation, changes in the average level of earnings and of retail prices have permitted the average family to respond to price change in the manner described by these cross-section consumption functions. If prices rise sufficiently faster than income between period one and period two, say, and family expenditures adjust to the new price situation in accordance with the cross-section functions described, families at the average income position would be in a deficit position. Income thus acts as a brake on changes in the level of total expenditures.

The function of income as a constraint upon the level of total family disbursements (expenditures plus savings) may be illustrated by a model that compares the relative difference between income and the consumption budget of the previous period repriced in terms of the cross-section functions. The difference between the two totals equals savings. Thus, at period one, income may be expressed as

$$X_1 = a + b + c + m, \quad (3)$$

where X is income, a , b , c are expenditures on food, housing, and other goods and services, respectively, and m equals savings.

The price effects on changes in expenditures from period one to period two, in terms of the cross-section functions, may be written

$$S_s = a(1 + \frac{1}{2}F) + b(1 + \frac{1}{2}H) + c(1 + K) + m, \quad (4)$$

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TABLE 3. Comparison of Average Family Expenditures for Food, Housing, and Other Consumption Items, Actual and Calculated Averages, 1918-1950^a

Survey Period ^b	Net Money Income	EXPENDITURES					
		Food		Housing ^c		Other Consumption Items	
		Actual	Calculated	Actual	Calculated	Actual	Calculated
1918-19	\$1488	\$ 544	\$ 610	\$193	\$246	\$ 751	\$ 723
1934-36 ^d	1496	506	524	264	253	860	782
1935-36	1806	568	568 ^e	270	270 ^e	862	862 ^e
1941	2492	752	709	324	349	1229	1190
1944	3411	1043	957	366	414	1429	1514
1950	4015	1275	1257	448	467	2378	1593

^a Actual average income and expenditure data are national urban averages derived from the cross-section surveys. The calculated averages were obtained by projecting the actual average expenditures for the selected base date, 1935-36, backward in time to 1918-19 and 1934-36, and forward to the succeeding survey periods, 1941, 1944, and 1950. The method of projection is described by equations (5) and (6).

^b See Appendix for sources of data.

^c Excludes fuel, light, and refrigeration.

^d Wage and clerical workers only.

^e Base date used in projections.

penditures in the previous period adjusted for price, and F , H , and K are the percentage changes in prices of food, housing, and other expenditures. Similarly, income in period two may be expressed as

$$\begin{aligned}
 X_2 = & a \left[(1 + \frac{1}{2}F) (1 + \frac{1}{2} \left(\frac{X_2 - S_2}{S_2} \right)) \right] + \\
 & b \left[(1 + \frac{1}{2}H) (1 + \frac{1}{2} \left(\frac{X_2 - S_2}{S_2} \right)) \right] + \\
 & c(1 + K_2) \left(1 + \frac{X_2 - S_2}{S_2} \right) + \\
 & m \left(1 + \frac{X_2 - S_2}{S_2} \right) - D_2 \quad (5)
 \end{aligned}$$

This function assumes price and income elasticities of food and housing expenditures to be 0.5, and 1.0 for other goods and services. D_2 is the difference between actual income in period two and total disbursements as measured by these propensities to consume and save.

If the functions expressed by sum-

consumer response to changes in the level of family income and retail prices, projections based on these relationships should correspond reasonably well to the observed survey data for the same dates.

Table 3 presents the results of a simple empirical application of equations (4) and (5). Average expenditures and income of all urban families, as derived from the national cross-section surveys conducted during 1918-1950, were used in this test. The survey period 1935-1936 was selected as the base date; average family income and expenditures for food, housing, and other goods and services, as recorded in this survey, were projected backward in time to 1918-1919 and 1934-1936, and forward to 1941, 1944, and 1950.^e

^e Equations (4) and (5) were not solved in this check, since the only purpose was to estimate average family expenditures for the three consumption categories. If the equa-

Actual and calculated average family expenditures for food and housing show fairly close correspondence; similarly, for all periods except 1950, the projected level of average expenditures for other consumption goods and services does not deviate substantially from the actual averages derived from the survey data. The serious underestimate for 1950, however, indicates the necessity for splitting this heterogeneous group of items into two or more groups. Further analysis will be required to determine to what extent the extreme upward shift in average expenditures on this category of items was caused by overbuying of consumer durables during the latter half

of 1950, following the Korean War scare.

The cross-section functions presented in this paper lay heavy stress upon food and housing prices as determinants of the changing level of total expenditures. Such a model might explain the pressures exerted in the labor market to increase wage rates as prices for these items rise, as evidenced by the high correlation between changes in the Bureau of Labor Statistics index of food prices and the level of per capita national income.

APPENDIX

Basic Sources of the Cross-Section Materials

NATIONAL URBAN SURVEYS OF FAMILY INCOME AND EXPENDITURES:

- 1888-90 Sixth and Seventh Annual Reports of the US Commissioner of Labor, 1891, 1892.
- 1901 *Cost of Living and Retail Prices of Food*, Eighteenth Annual Report of the US Commissioner of Labor, 1903.
- 1909 *Cost of Living in American Towns*, Great Britain Board of Trade, 1911.
- 1918-19 *Cost of Living in the United States*, Bul. No. 357, US Bureau of Labor Statistics.
- 1935-36 *Family Expenditures in the United States: Statistical Tables and Appendices*, June, 1941. Also, *Consumer Incomes in the United States*, National Resources Planning Board, August, 1938.
- 1941 *Family Spending and Saving in Wartime*, Bul. No. 822, U.S. Bureau of Labor Statistics, 1945.

$$S_2 - m = a(1 + \frac{1}{2}F) + b(1 + \frac{1}{2}H) + c(1 + K)$$

and

$$X_2 - m \left(1 + \frac{X_2 - S_2}{S_2} \right) + D_2 = a \left[(1 + \frac{1}{2}F) \right. \\ \left. (1 + \frac{1}{2} \left(\frac{X_2 - S_2}{S_2} \right)) \right] + b \left[(1 + \frac{1}{2}H) (1 + \frac{1}{2} \left(\frac{X_2 - S_2}{S_2} \right)) \right] + c \left[(1 + K_2) \left(1 + \frac{X_2 - S_2}{2} \right) \right] \quad (6)$$

the right-hand side of both functions can be quantified, since actual average family income and expenditures at the base date 1935-1936 for the three categories are known, as the changes in the level of the BLS Consumer's Price Index. Thus, food expenditures for 1950 can be estimated by inserting in the first bracket of equation (5),

$$a \left[(1 + \frac{1}{2}F) (1 + \frac{1}{2} \left(\frac{X_2 - S_2}{S_2} \right)) \right]$$

the 1935-1936 average family expenditure in food for a , the percentage change between 1935-1936 and 1950 in the Consumer's Price Index for food for F , and the percentage difference between average family income in 1950, X_2 , and the calculated value of S_2 . (Here, of course, since S_2 is not known, the value $(S_2 - m)$ must be substituted.)

- 1944 *Expenditures and Savings of City Families in 1944*, Serial No. R 1818, US Bureau of Labor Statistics, January, 1946.
- 1950 Unpublished tabulations of the 1950 Bureau of Labor Statistics Survey of Consumer Income, Expenditures and Savings. The data used were based on a seventeen-city subsample.

ture data relating to the 1909 survey were summarized in: Dorothy S. Brady and Helen Barber, "The Pattern of Food Expenditures," *Review of Economics and Statistics*, XXX, No. 3, August, 1948.

A portion of the 1888 materials was derived from tabulations contained in *A Study of Saving in the United States: Supplementary Studies*, Vol. III, by Raymond Goldsmith, Dorothy S. Brady, and Horst Mendershausen, in the section prepared by Dorothy S. Brady.

Note: The income and food expendi-

TABLE 4. Average Family Expenditures for Current Consumption, in Current Dollars and 1935-1939 Dollars, by Current Income Class, 1888-1950

Income Class Range	Average Income Current \$	Total Consumption Current \$	Expenditures 1935-1939 \$	Survey Date
Under \$499	\$ 150	\$ 196	\$ 350	1901
	161	239	435	1888-90
	250	312	558	1901
	302	569	577	1935-36
	313	887	707	1944
	322	457	434	1941
	333	360	655	1888-90
	350	389	694	1901
	450	466	832	1901
	495	487	885	1888-90
\$500-999	550	540	964	1901
	620	712	722	1935-36
	633	1,217	711	1950
	650	612	1,092	1901
	686	632	1,149	1888-90
	735	781	742	1941
	750	693	1,237	1901
	776	1,053	839	1944
	813	843	781	1918-19
	850	771	1,376	1901
	854	904	917	1935-36
	875	777	1,413	1888-90
	950	816	1,458	1901
1,000-1,499	1,050	900	1,607	1901
	1,075	1,076	997	1918-19
	1,080	911	1,656	1888-90
	1,087	1,108	1,124	1935-36
	1,150	973	1,738	1901
	1,243	1,407	1,121	1944
	1,256	1,288	1,224	1941
	1,321	1,300	1,318	1935-36
	1,344	1,301	1,205	1918-19
	1,465	1,052	1,879	1901

TABLE 4 (Continued)

Income Class Range	Average Income Current \$	Total Consumption Expenditures		Survey Date
		Current \$	1935-1939 \$	
1,500-1,900	1,509	1,038	1,887	1888-90
	1,539	1,738	1,015	1950
	1,562	1,507	1,528	1935-36
	1,632	1,537	1,424	1918-19
	1,754	1,662	1,580	1941
	1,779	1,788	1,425	1944
	1,802	1,700	1,724	1935-36
	1,925	1,756	1,627	1918-19
2,000-2,999	2,144	1,958	1,986	1935-36
	2,232	2,137	2,031	1941
	2,259	2,051	1,634	1944
	2,272	2,055	1,905	1918-19
	2,553	2,701	1,578	1950
	2,617	2,303	2,336	1935-36
	2,735	2,572	2,445	1941
	2,757	2,410	1,920	1944
	2,790	2,467	2,286	1918-19
3,000-3,999	3,298	2,740	2,779	1935-36
	3,480	2,838	2,261	1944
	3,537	3,570	2,085	1950
	3,698	3,234	3,074	1941
4,000-4,999	4,220	3,332	3,379	1935-36
	4,408	3,439	2,740	1944
	4,630	4,426	2,585	1950
5,000 and over	5,595	5,357	3,129	1950
	6,120	4,717	4,484	1941
	6,522	4,779	4,847	1935-36
	6,671	6,129	3,580	1950
	7,595	4,305	3,430	1944
	8,320	7,109	4,152	1950
	13,382	8,731	8,299	1941
	16,756	11,836	6,914	1950

TABLE 5. Average Family Expenditures for Food and Net Money Income, in Current and Deflated* Dollars, 1888-1950

Income Class Range	Average Income		Food Expenditures			Survey Date
	Current \$	Deflated \$	Current \$	Current \$	Deflated \$	
Under \$499	\$ 150	\$ 12.2	\$ 100	\$ 103	\$ 132	1901
	161	12.7	119	119	155	1888-90
	250	15.8	148	149	191	1901
	302	17.4	232	242	241	1935-36
	313	17.7	374	424	364	1944
	322	17.9	183	203	197	1941
	333	18.2	163	157	204	1888-90
	350	18.7	187	183	234	1901
	450	21.2	218	213	273	1901
	451	21.2	—	217	261	1909
	495	22.2	217	202	263	1888-90
\$500-999	550	23.5	249	241	309	1901
	620	24.9	290	293	292	1935-36
	633	25.2	407	549	384	1950
	643	25.4	—	284	342	1909
	650	25.5	266	257	329	1901
	686	26.2	255	229	298	1888-90
	735	27.1	324	334	324	1941
	750	27.4	287	277	355	1901
	776	27.9	434	492	422	1944
	813	28.5	376	352	320	1918-19
	850	29.2	319	301	385	1901
	854	29.2	354	354	352	1935-36
	875	29.6	283	250	325	1888-90
	883	29.7	—	354	426	1909
	950	30.8	326	309	396	1901
1,000-	1,050	32.4	349	327	419	1901
	1,075	32.8	463	427	363	1918-19
	1,080	32.9	306	264	344	1888-90
	1,087	33.0	414	414	412	1935-36
	1,118	33.4	—	406	489	1909
	1,150	33.9	367	351	449	1901
	1,243	35.3	555	601	515	1944
	1,256	35.4	468	488	474	1941
	1,321	36.3	472	468	466	1935-36
	1,344	36.7	522	476	405	1918-19
	1,358	36.9	—	444	535	1909
	1,465	38.3	384	373	478	1901
	1,509	38.8	297	255	332	1888-90
	1,539	39.2	603	740	518	1950
	1,562	39.5	519	514	511	1935-36
	1,631	40.4	—	486	585	1909
	1,632	40.4	579	518	441	1918-19
	1,754	41.9	575	581	564	1941
	1,779	42.2	701	736	631	1944
	1,802	42.4	568	558	555	1935-36
	1,879	43.3	—	544	655	1909
	1,925	43.9	633	563	479	1918-19

nditures deflated by the square root of the Consumer's Price Index for food (i.e., $\frac{2}{PI}$); one deflated to the one half power (i.e., $\frac{1}{PI}$).

TABLE 5 (Continued)

Income Class Range	Average Income		Food Expenditures 3.5 Persons			Survey Date
	Current \$	Deflated \$	Current \$	Current \$	Deflated \$	
2,000-2,999	2,144	46.3	627	616	613	1935-36
	2,232	46.2	666	679	660	1941
	2,259	47.5	797	830	712	1944
	2,272	47.7	721	621	529	1918
	2,316	47.1	—	614	739	1909
	2,553	50.5	911	997	698	1950
	2,617	51.2	706	682	679	1935-36
	2,735	52.3	839	824	800	1941
	2,757	52.5	913	948	813	1944
	2,790	52.8	876	730	621	1918-19
3,000-3,999	3,298	57.4	793	759	755	1935-36
	3,480	59.0	1,043	1,025	879	1944
	3,537	59.5	1,126	1,160	812	1950
	3,698	60.8	949	932	905	1941
4,000-4,999	4,220	65.0	899	848	844	1935-36
	4,408	66.4	1,150	1,100	943	1944
	4,650	68.0	1,319	1,332	933	1950
5,000- and over	5,595	74.8	1,500	1,486	1,040	1950
	6,120	78.2	1,330	1,236	1,201	1941
	6,522	80.8	1,143	1,086	1,081	1935-36
	6,671	81.7	1,738	1,692	1,185	1950
	7,595	87.1	1,386	1,314	1,127	1944
	8,320	91.2	1,969	1,933	1,353	1950
	13,382	115.7	1,943	1,782	1,731	1941
	16,756	129.4	2,642	2,618	1,833	1950

TABLE 6. Average Family Expenditures for Housing and Net Money Income in Current and in Deflated* Dollars, 1888-1950

Income Class Range	Average Income		Housing Expenditures		Survey Date
	Current \$	Deflated \$	Current \$	Deflated \$	
Under \$499	\$ 150	\$ 12.2	\$ 33	\$ 43	1901
	161	12.7	37	50	1888-90
	250	15.8	56	74	1901
	302	17.4	123	126	1935-36
	313	17.7	206	198	1944
	322	17.9	93	90	1941
	333	18.2	54	73	1888-90
	350	18.7	73	96	1901
	450	21.2	87	114	1901
	495	22.2	74	100	1888-90
500-999	550	23.5	100	131	1901
	620	24.9	140	144	1935-36
	633	25.2	235	211	1950
	650	25.5	113	148	1901
	686	26.2	98	132	1888-90
	735	27.1	139	135	1941
	750	27.4	126	165	1901
	776	27.9	173	166	1944
	813	28.5	122	125	1918-19
	850	29.2	132	173	1901
	854	29.2	168	172	1935-36
	875	29.6	121	163	1888-90
	950	30.8	144	189	1901
1,000-1,499	1,050	32.4	158	207	1901
	1,075	32.8	150	154	1918-19
	1,080	32.9	130	175	1888-90
	1,087	33.0	192	197	1935-36
	1,150	33.9	161	211	1901
	1,243	35.3	220	212	1944
	1,256	35.4	219	213	1941
	1,321	36.3	218	224	1935-36
	1,344	36.7	180	185	1918-19
	1,465	38.3	183	240	1901
1,500-1,999	1,509	38.8	131	177	1888-90
	1,539	39.2	291	261	1950
	1,562	39.5	248	254	1935-36
	1,632	40.4	207	212	1918-19
	1,754	41.9	251	244	1941
	1,779	42.2	253	243	1944
	1,802	42.4	273	280	1935-36
	1,925	43.9	214	219	1918-19
2,000-2,999	2,144	46.3	300	308	1935-36
	2,232	46.2	310	301	1941
	2,259	47.5	291	280	1944
	2,272	47.7	248	254	1918-19
	2,553	50.5	341	306	1950
	2,617	51.2	339	348	1935-36
	2,735	52.3	339	329	1941
	2,757	52.5	322	310	1944
	2,790	52.8	260	267	1918-19

* Housing expenditures deflated by the square root of the Consumer's Price Index for housing (i.e., $\frac{1}{\sqrt{PI}}$); money income deflated to the one half power (i.e., $\frac{1}{\sqrt{PI}}$).

TABLE 6 (Continued)

Income Class Range	Average Income Current \$	Income Deflated \$	Housing Expenditures Current \$	Expenditures Deflated \$	Survey Date
3,000-3,999	3,298	57.4	396	406	1935-36
	3,480	59.0	361	347	1944
	3,537	59.5	413	371	1950
	3,698	60.8	386	375	1941
4,000-4,999	4,220	65.0	452	464	1935-36
	4,408	66.4	394	379	1944
	4,630	68.0	472	424	1950
5,000 and over	5,595	74.8	546	490	1950
	6,120	78.2	525	510	1941
	6,522	80.8	692	710	1935-36
	6,671	81.7	628	564	1950
	7,595	87.1	466	448	1944
	8,320	91.2	742	666	1950
	13,382	115.7	1,142	1,109	1941
	16,756	129.4	1,414	1,270	1950

TABLE 7. Average Family Income and Clothing Expenditures, in Current Dollars, and Average Family Clothing Expenditures per Person in 1935-1939 Dollars, 1888-1950

Income Class Range	Average Income Current \$	Clothing Expenditures Per Family Current \$	Per Capita 1935-39 \$	Survey Date
Under \$499	\$ 150	\$ 17	\$ 9	1901
	161	31	14	1888-90
	250	27	14	1901
	302	39	13	1935-36
	313	42	12	1944
	322	26	9	1941
	333	51	21	1888-90
	350	39	18	1901
	450	53	25	1901
	495	72	27	1888-90
\$500-999	550	65	29	1901
	620	54	16	1935-36
	633	76	25	1950
	650	79	35	1901
	686	101	34	1888-90
	735	69	20	1941
	750	94	42	1901
	776	80	24	1944
	813	112	21	1918-19
	850	105	44	1901
	854	73	21	1935-36
	875	124	39	1888-90
	950	117	50	1901

TABLE 7 (Continued)

Income Class Range	Average Income Current \$	Clothing Expenditures Per Family Current \$	Per Capita 1935-39 \$	Survey Date
1,000-1,499	1,050	136	55	1901
	1,075	156	28	1918-19
	1,080	157	45	1888-90
	1,087	100	29	1935-36
	1,150	145	64	1901
	1,243	163	43	1944
	1,256	139	42	1941
	1,321	122	35	1935-36
	1,344	206	35	1918-19
	1,465	165	76	1901
1,500-1,999	1,509	163	46	1888-90
	1,539	160	42	1950
	1,562	152	43	1935-36
	1,632	257	41	1918-19
	1,754	191	53	1941
	1,779	234	55	1944
	1,802	174	48	1935-36
	1,925	307	48	1918-19
2,000-2,999	2,144	215	60	1935-36
	2,232	233	66	1941
	2,259	283	66	1944
	2,272	384	54	1918-19
	2,553	280	55	1950
	2,617	266	70	1935-36
	2,735	310	79	1941
	2,757	364	84	1944
	2,790	503	63	1918-19
3,000-3,999	3,298	342	88	1935-36
	3,480	462	90	1944
	3,537	400	67	1950
	3,698	432	110	1941
4,000-4,999	4,220	430	105	1935-36
	4,408	623	112	1944
	4,630	545	85	1950
5,000 and over	5,595	668	99	1950
	6,120	663	142	1941
	6,522	601	151	1935-36
	6,671	785	110	1950
	7,595	848	148	1944
	8,320	999	144	1950
	13,382	1,146	234	1941
	16,756	1,697	251	1950

TABLE 8. Average Family Expenditures for Men and Women (15 Years and Over),
per Person, in Current and 1935-1939 Dollars, by Current Income Level,
1918-1919 to 1944
Clothing

Income Class Range	Average Income Current \$	Men		Women		Survey Date
		Clothing per Person Current \$	Expenditure per Person 1935-39 \$	Clothing per Person Current \$	Expenditure per Person 1935-39 \$	
Under \$499	\$ 302	\$ 13	\$ 13	\$ 14	\$ 14	1935-36
	310	20	18	21	20	1941
\$500-999	597	32	23	40	29	1944
	734	37	35	34	32	1941
	757	21	22	23	24	1935-36
	813	38	31	30	24	1918-19
1,000-1,499	1,075	53	42	44	35	1918-19
	1,194	34	35	38	39	1935-36
	1,243	58	55	66	62	1941
	1,344	66	53	58	46	1918-19
1,500-1,999	1,572	65	47	97	70	1944
	1,632	77	62	73	58	1918-19
	1,674	49	50	55	57	1935-36
	1,749	67	63	72	68	1941
	1,925	87	69	84	67	1918-19
2,000-2,999	2,227	76	72	91	86	1941
	2,272	94	75	95	76	1918-19
	2,315	66	68	75	77	1935-36
	2,493	86	62	125	90	1944
	2,732	88	82	107	101	1941
	2,790	100	80	111	88	1918-19
3,000 and over	3,481	108	78	151	109	1944
	3,542	92	95	111	114	1935-36
	3,707	111	105	149	140	1941
	6,120	157	148	183	172	1941
	6,232	145	104	228	164	1944
	6,522	143	147	187	192	1935-36
	13,357	241	227	352	331	1941

TABLE 9. Average Family Expenditures for Transportation and House Furnishings and Equipment, in Current and 1935-1939 Dollars, by Current Income Level, 1935-1936 to 1950

Income Class Range	Average Income Current \$	Average Transportation Expenditures		Average Expenditures for House Furnishings		Survey Date
		Current \$	1935-39 \$	Current \$	1935-39 \$	
Under \$499	\$ 302	\$ 18	\$ 18	\$ 10	\$ 10	1935-36
	313	23	21	5	4	1944
	322	28	27	9	8	1941
\$500-999	620	27	27	16	17	1935-36
	633	70	43	56	29	1950
	735	51	50	30	28	1941
	776	39	35	25	18	1944
	854	48	49	30	31	1935-36
1,000-1,499	1,087	77	78	41	43	1935-36
	1,243	55	50	39	29	1944
	1,256	105	103	67	62	1941
	1,321	99	101	51	53	1935-36
1,500-1,999	1,539	123	76	73	38	1950
	1,562	134	136	59	62	1935-36
	1,754	143	140	80	75	1941
	1,779	86	78	49	36	1944
	1,802	166	169	72	75	1935-36
2,000-2,999	2,144	213	216	79	83	1935-36
	2,232	275	269	116	108	1941
	2,259	119	107	60	44	1944
	2,553	286	176	190	100	1950
	2,617	266	270	91	95	1935-36
	2,735	326	319	163	152	1941
	2,757	156	141	88	65	1944
3,000-3,999	3,298	317	322	99	104	1935-36
	3,480	182	164	95	70	1944
	3,537	441	272	222	116	1950
	3,698	415	406	210	196	1941
4,000-4,999	4,220	417	424	115	120	1935-36
	4,408	261	236	132	97	1944
	4,630	577	356	320	168	1950
5,000 and over	5,595	767	473	422	221	1950
	6,120	633	620	202	188	1941
	6,522	610	620	176	184	1935-36
	6,671	846	522	471	247	1950
	7,595	280	253	157	115	1944
	8,320	931	574	434	227	1950
	13,382	1,352	1,324	329	307	1941
	16,756	1,392	858	786	412	1950

Table 10. Average Family Expenditures for Medical Care and Personal Care, in Current and 1935-1939 Dollars, by Income Level, 1935-1936 to 1950

Income Class	Average Income Current \$	Average Medical Care Expenditures Current \$	Average Personal Care Expenditures Current \$	Survey Date
Under \$499	\$ 302	\$ 26	\$ 13	1935-36
	313	62	21	1941
	322	33	8	1944
\$500-999	620	30	17	1935-36
	633	98	21	1950
	735	29	17	1941
	776	88	19	1944
	854	39	21	1935-36
1,000-1,499	1,087	47	26	1935-36
	1,243	94	33	1944
	1,256	58	27	1941
	1,321	61	30	1935-36
1,500-1,999	1,539	99	44	1950
	1,562	74	35	1935-36
	1,754	85	36	1941
	1,779	105	41	1944
	1,802	81	39	1935-36
2,000-2,999	2,144	98	45	1935-36
	2,232	113	45	1941
	2,259	104	48	1944
	2,553	143	67	1950
	2,617	115	53	1935-36
	2,735	90	55	1941
	2,757	123	56	1944
3,000-3,999	3,298	142	63	1935-36
	3,480	149	65	1944
	3,537	132	84	1950
	3,698	154	74	1941
4,000-4,999	4,220	186	72	1935-36
	4,408	190	84	1944
	4,630	219	103	1950
5,000 and over	5,595	270	113	1950
	6,120	244	106	1941
	6,522	286	98	1935-36
	6,671	313	134	1950
	7,595	265	235	1944
	8,320	401	271	1950
	13,382	399	188	1941
	16,756	475	214	1950

Table 11. Average Family Expenditures for Tobacco and Recreation, in Current and 1935-1939 Dollars, by Income Level, 1935-1936 to 1950

Income Class	Average Income Current \$	Average Tobacco Expenditures Current \$	Average Recreation Expenditures Current \$	Survey Date
Under \$499	\$ 302	\$ 11	\$ 8	1935-36
	313	16	9	1941
	322	9	8	1944
\$500-999	620	15	12	1935-36
	633	16	10	1950
	735	15	14	1941
	776	15	15	1944
	854	21	18	1935-36
1,000-1,499	1,087	26	27	1935-36
	1,243	21	17	1944
	1,256	34	31	1941
	1,321	30	35	1935-36
1,500-1,999	1,539	35	23	1950
	1,562	34	35	1935-36
	1,754	40	37	1941
	1,779	41	34	1944
	1,802	37	38	1935-36
2,000-2,999	2,144	42	43	1935-36
	2,232	49	45	1941
	2,259	41	34	1944
	2,553	56	55	1950
	2,617	46	47	1935-36
	2,735	52	48	1941
	2,757	48	40	1944
3,000-3,999	3,298	51	52	1935-36
	3,480	59	49	1944
	3,537	72	47	1950
	3,698	71	66	1941
4,000-4,999	4,220	56	57	1935-36
	4,408	71	59	1944
	4,630	83	54	1950
5,000 and over	5,595	83	54	1950
	6,120	108	100	1941
	6,522	68	70	1935-36
	6,671	104	68	1950
	7,595	76	65	1944
	8,320	110	72	1950
	13,382	97	90	1941
	16,756	125	81	1950

A STATISTICAL STUDY OF FACTORS INFLUENCING TEMPORAL VARIATIONS IN AGGREGATE SERVICE EXPENDITURES¹

Robert Ferber

As part of an over-all study of consumer expenditures for services and the forces influencing such expenditures, an attempt was made to explain statistically the variations in service expenditures over time. Service outlays in general have been accorded little attention in the literature relative to the numerous studies of consumer expenditures on durable and nondurable goods, and almost no attention has been given to quantifying relationships between serv-

ice expenditures and other variables.² In view of the growing importance of service expenditures in the economy,³ this is a subject that seems well worth some attention.

The purpose of this paper is twofold: (1) to explain the variation in aggregate consumer expenditures for total services as well as for major types of services during the period 1935-1953, excluding the war years, 1942-1946;⁴ and (2) to compare the income elasticities

¹ Based in part on a paper delivered by the writer at the Conference on Consumption and Economic Development of the Universities-National Bureau Committee, October, 1955. The writer would like to thank Ruth Mack and George Stigler for many useful suggestions as well as George Ruiz and Fadil Zuwaylif of the Bureau of Economic and Business Research of the University of Illinois for assistance with the statistical analysis.

² About the only exception is the computation by Mosak of a consumption function for services. J. L. Mosak, "Forecasting Post-war Demand: III" *Econometrica*, XIII (1945), 25-53, and, in a more limited manner, occasional estimates of the Office of

Business Economics of the income elasticity of expenditures on specific services from time series data. See, for example, L. J. Paradiso and Clement Winston, "Consumer Expenditure-Income Patterns," *Survey of Current Business* (September, 1955), 27-32.

³ See Morris Cohen, "Spending for Services," *The Business Record* (September, 1955), 330-35; also Robert Ferber, "Consumer Expenditures for Services in the United States," unpublished manuscript.

⁴ 1935 is the first year for which price indexes for services by type could be computed. Expenditure figures on the same base in current dollars are available back at least as far as 1929.

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ties obtained in this manner for different types of services with income elasticities obtained by the more "impersonal" method of relating each type of expenditure in turn to the same set of independent variables, disposable income and time, a method used by the Office of Business Economics and by various private organizations in estimating income elasticities for different goods and services.

The definition of service expenditures employed in this analysis is the same as that of the United States Department of Commerce in its national income estimates, namely, the market value of the purchases of services by individuals and nonprofit institutions including the value of services received in kind, such as the rental value of owner-occupied dwellings. The different categories of services used here are shown in the tabulation below together with data on the relative importance of each category at the beginning and at the end of the period of observation.

	Relative importance in	
	1935	1953
Housing	34.9%	34.3%
Personal business	14.0	13.1
Household utilities and related services	10.5	11.2
Medical care	9.9	11.1
Recreation	5.8	5.3
User-operated transportation	2.7	4.7
Purchased transportation	4.9	3.7
Clothing and jewelry services	3.4	3.7
Religious and welfare activities	4.0	3.7
Domestic service	4.2	3.3
Private education and research	2.3	3.0
Personal care	2.0	1.5
Foreign travel	1.4	1.4
Total	100.0%	100.0%

It might be noted that during this period total outlays on services rose from \$21.9 billions to \$81.4 billions, approximately the same, proportionately, as the increase in total consumer

expenditures. The share of services declined somewhat in the late prewar years, but had begun to increase again in the postwar years, rising from 31.0 percent in 1947 to 35.4 percent in 1953.

IDENTIFICATION OF VARIABLES

THE APPROACH

The problem of identifying relevant variables in the case of aggregate time series relationships is more difficult than for budget data because in the latter instance the matter is usually resolved by convenience; no other data are available! With time series a great many statistics are available and the problem becomes one of identification and discrimination, i.e., separating the more important variables from the less important. Essentially, there are three ways of tackling this problem: to do so by *a priori* reasoning; by means of simple correlations (or scatter diagrams) between the dependent variable

and alternative independent variables; or to use a "blunderbuss approach" of computing a multiple regression of the dependent variable on all available possible independent variables and then

selecting those that prove statistically significant (provided, presumably, that their coefficients also "make sense") and are also not too closely intercorrelated. The latter course is not feasible in this case because of the scarcity of observations, let alone the matter of rationalizing the results of such an operation. Simple correlations, on the other hand, provide the pitfall of making no allowance for higher order interaction effects, with the result that relevant variables are missed.

For these reasons, the approach in this analysis leans heavily on *a priori* reasoning based on and/or supplemented by empirical observations. This is by no means an ideal approach (after all, what is in economic statistics?), and possesses the particular disadvantage of exposing the limitations of one's reasoning processes, but reliance on empirically determined relationships, seems at least as hazardous.

GENERAL FACTORS

The factors influencing aggregate service expenditures can be divided into two types: those that appear to influence significantly all major categories of services, and those that are of relevance to particular categories only. In the former class are the four perennial factors influencing all types of demand: people, money, prices, and tastes. In the present study, five specific such variables seem to merit ready consideration. They are:

- Population.
- Prices of service items in relation to those of other commodities.
- Disposable income of consumers.
- Liquid assets of consumers; possibly nonliquid assets as well.
- Changes in living habits and customs.

The last factor is perhaps best exemplified by the long-run shift from purchased to user-operated transportation. The declining use of domestic service (due in part to price considerations) and the sharply increased expenditures on education and on medical care also reflect to some extent changes in living habits. Sociological, political, and other influences besides the economic underlie such changes in customs, and though such factors can be identified, their quantification is often a perplexing task.

These five variables are by no means the only ones to influence aggregate expenditures on services but they seem to be the principal ones. Such factors as past incomes, undistributed profits, income distribution, even past standards of living, may also be relevant in a general sense and some of them are considered in connection with particular types of expenditures as noted below.

SPECIFIC FACTORS

In addition to the general factors, there are also specific influences to be considered that affect expenditures for the main types of services. The chief such influences are best enumerated in connection with each component of service expenditures, as is done below.

HOUSING

The bulk of these expenditures has come to be rent on owner-occupied dwellings. In 1953 such "expenditures" comprised two thirds of housing service outlays, the remainder being almost entirely rent on tenant-occupied dwellings. Since the two categories have similar fluctuations, with the exception of the steeper secular trend in rent on

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owner-occupied dwellings, we may reduce the problem to the determination of specific factors influencing the level of per capita expenditures on rents deflated for changes in price, i.e., the cost of housing. On the basis of several prior studies of the housing market,⁵ the principal relevant variables seem to be income, savings, the degree of occupancy of available dwelling units, and family size. Degree of occupancy is a measure of the pressure on housing and hence is likely to exert a direct effect on the amount of rent expenditures per capita; the necessary data are, however, unfortunately not available. The average size of family, or the number of families, is another possible variable, for as family size decreases (or the number of families rises) with population constant, rent expenditures per capita would be expected to increase.

PERSONAL BUSINESS

The principal items in this category are brokerage charges, expenses of handling life insurance, bank and trust charges, legal services, interest on personal debt, and the nebulous item "services furnished without payment by financial intermediaries" (mainly commercial banks). Besides the level of business activity as reflected by current disposable income, such expenditures, adjusted to a per capita base at constant prices, have been influenced by the changing popularity of these different services—the increased purchases of life insurance, the growing use of consumer

credit, and the reduction in individual investments in common and preferred stocks, at least until recently. Income distribution may be of some relevance here, since many of these services (except for consumer credit) are likely to be used almost exclusively by upper income groups.

MEDICAL CARE

An important determinant of outlays for medical care is its availability, which has increased considerably during the period under study. Three main facets of this greater availability may be distinguished.⁶ First, there has been the rapid growth of medical facilities, a growth that was accelerated during World War II, accompanied by the discovery of new forms of treatment for ailments and diseases. About one million people were engaged in providing medical care in 1950, roughly half of whom were physicians, dentists, and registered nurses. Although there were over two hundred thousand physicians in the country in the early 1950's, surveys by the United States Public Health Service and the Department of Agriculture indicated that many thousands more were needed to provide adequate medical care to all those who needed it.⁷ The discovery of new drugs and

⁶ A good general survey of developments in this area will be found in J. F. Dewhurst and Associates, *America's Needs and Resources* (New York: Twentieth Century Fund, 1955), ch. 10. A more comprehensive treatment is provided by G. W. Bachman and Associates, *Health Resources in the United States* (Washington, DC: Brookings Institution, 1952).

⁷ See *Building America's Health*, Report of the President's Commission on the Health Needs of the Nation, 1953, Vol. I, pp. 11-21. It was estimated that at least 21,000 more physicians would be needed in 1960

⁵ An interesting discussion of the behavior of real estate markets under various economic conditions will be found in E. M. Fisher, *Urban Real Estate Markets: Characteristics and Financing* (New York: National Bureau of Economic Research, 1951), chs. 3-5.

other forms of treatment has undoubtedly also contributed to increased consumer expenditures in this area.

Second has been the improvement in the ease of paying for private medical care. This is due to the higher incomes of most people, coupled with the expansion of voluntary health insurance and group insurance of both companies and unions. By the end of 1953 nearly 99 million people were covered by one or more of these forms, more than four times the number covered ten years earlier.⁸ Third has been the growth in public health facilities. Governmental outlays for health and medical care have increased more than five times from 1940-1941 to 1952-1953. Although most of these costs are borne by governments, a part at least is paid by individuals.

Thus availability of medical services, on the one hand, and the increased incomes and liquid assets of people, on the other hand, seem to be primary determinants of consumer outlays for medical care.

HOUSEHOLD UTILITIES

Electricity, gas, and telephone and telegraph expenditures are the main components of this category, compris-

than the predicted supply for that year. This point is disputed by the American Medical Association, which has registered concern whether attempts to provide medical care on such an adequate scale might not produce an oversupply of physicians. The latter is to be avoided, of course, at all costs.—F. G. Dickinson, *How Bad is the Distribution of Physicians?* (American Medical Association, 1954).

⁸ *The Extent of Voluntary Health Insurance Coverage in the United States*, Health Insurance Council, November, 1954.

ing 77 percent of the total in 1953. As with medical care, availability of these services is an important determinant of expenditures for them in view of the recent nature of the innovations. An additional factor is the increase in the number of appliances run by gas or electricity, which would obviously lead to greater utilization of these services. Still another factor has been the success of electricity, and particularly of gas, in capturing a large part of the heating market formerly held by coal, but this may well have been taken into account by the preceding two factors.

RECREATION

Motion picture and legitimate theater admissions, club fees, admissions to participant and spectator sports, and radio and television repairs comprise the bulk of service expenditures for recreation. Although the aggregate has risen substantially over the years, there have been marked differences in the growth in outlays for each of these forms of recreation as is evident from Chart A. Club fees and motion picture admissions have lost ground in particular relative to other forms of recreation, the latter being hard hit by television and clubs never yet having regained the popularity they enjoyed just prior to the depression. Participant and spectator sports have also lost ground to television,⁹ though not as much as other forms of amusement. Service expenditures for recreation in general have not increased as rapidly as the increase in outlays for other forms of recreation—

⁹ The degree of participation in "participant sports" is a rather fine point. Roughly half of all expenditures in this category are on parimutuel bets and nonvending machines.

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MILLIONS OF DOLLARS

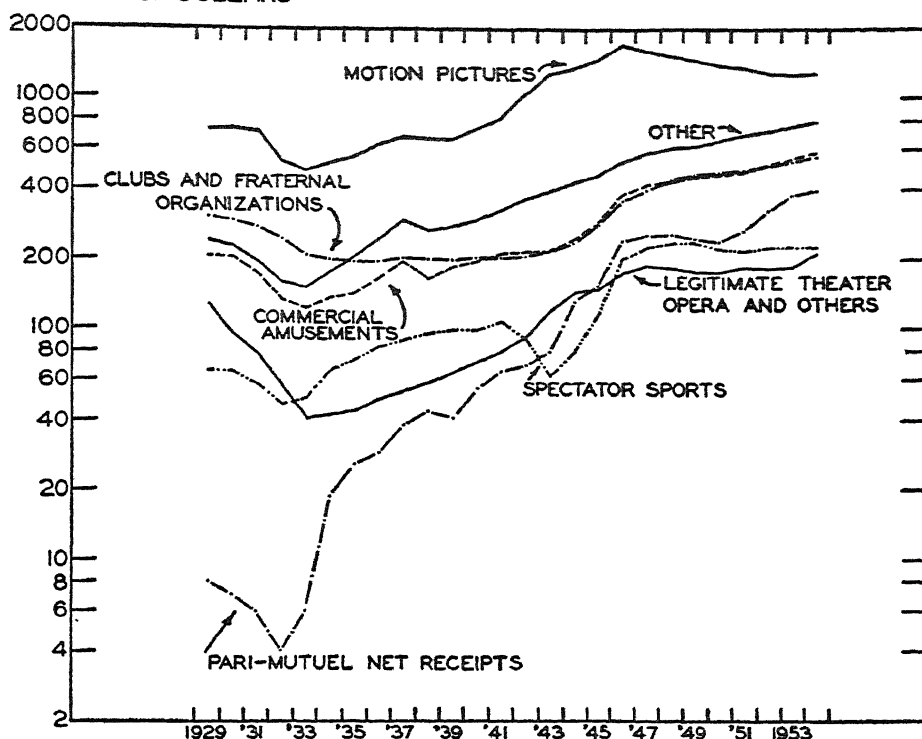


CHART A. Expenditures for Recreation by Type, 1929-1954. (*Business Facts*, 1954, p. 4).

pets, hobbies, and sports equipment.¹⁰ This is a not uncommon phenomenon in periods of prosperity, for recreation expenditures on goods are generally much more sensitive to fluctuations in income

¹⁰ The matter of what to include in service expenditures is another fine point and the United States Department of Commerce classification contains some ambiguities in this respect. Thus, radio and television repairs are classified under recreation (Whose recreation? Certainly not the owner's!) while auto repairs, many of which are undoubtedly incurred in the course of recreation, are not classified in this manner. The same might be said of many food and other expenditures.

than are similar expenditures for services.¹¹

Underlying the rise in all recreation expenditures has been the increased amount of time available for such frivolities—the reduced length of the work week, as well as the changing age distribution of the population and the growing proportion of older people,

¹¹ For an analysis of aggregate expenditures for recreation in the United States by type of expenditure (goods as well as services), see A. B. Weiss, *The Changing Pattern of Recreational Expenditures*, unpublished M.B.A. Thesis, University of Pennsylvania, 1954.

who have more time for recreation than do most younger people and, to the extent that funds are available, are likely to devote more of their resources to this purpose. Also worthy of mention is the increased interest in recreation in general brought about in part by the raised levels of living in the post-World War II years and by the relaxation of many moral sanctions existing in the past against idleness and recreation, in large part undoubtedly a rationalization of the former event.

USER-OPERATED TRANSPORTATION

Since automobile servicing, parking, rental, and insurance constitute practically this entire category, the number of automobiles in use, or motor-vehicle miles per year, is likely to be the principal specific determinant of such outlays. The age distribution of cars might be another significant factor in view of the well-known tendency for repair costs to mount as a car ages.

PURCHASED TRANSPORTATION

Consumer expenditures for purchased transportation (local as well as intercity) appear to have been influenced by two conflicting forces. On the one hand, the growing interest in travel and vacations accompanied by the rising level of incomes has provided a sharp stimulant to transportation. On the other hand, the ever-increasing popularity of the automobile—an enthusiasm which as yet does not even seem to be dampened by the lack of space to put them all—has diverted much of transportation expenditures away from common carriers. As is evident from Chart B, local carriers have suffered more from

this effect than have intercity carriers. The business of the latter has been bolstered substantially during the period studied by the rapid growth in air and bus travel. Although much of this growth has been at the expense of the railroads, it has also undoubtedly served to maintain the volume of intercity travel above the levels at which it might otherwise have been.

On balance, therefore, a principal determinant of per capita expenditures for purchased transportation may well be the number of automobiles in use, on a per capita or a per family basis.¹² The relationship should obviously be an inverse one, supplementing the income effect.

CLOTHING SERVICES

Dry cleaning and pressing of garments account for most of the expenditures in this category, with laundering and shoe repair constituting most of the remaining expenditures. Obviously, the stock of the items on which the services are performed would be a major determinant of such expenditures, and ideally the age distribution as well. The only data even remotely approaching this factor are annual sales and consumer purchases of these items, and an attempt is made to relate these data to outlays for these services.

Another specific factor that would be expected to stimulate outlays for clothing services is the increasing proportion

¹² From a logical point of view, cars per family seems to be a better variable than cars per capita, but in view of the problems involved in defining a "family" and the limitations of the statistical estimates of the number of families in the country, particularly for the pre-World War II years, this variable is expressed on a per capita basis.

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PASSENGER MILES IN BILLIONS

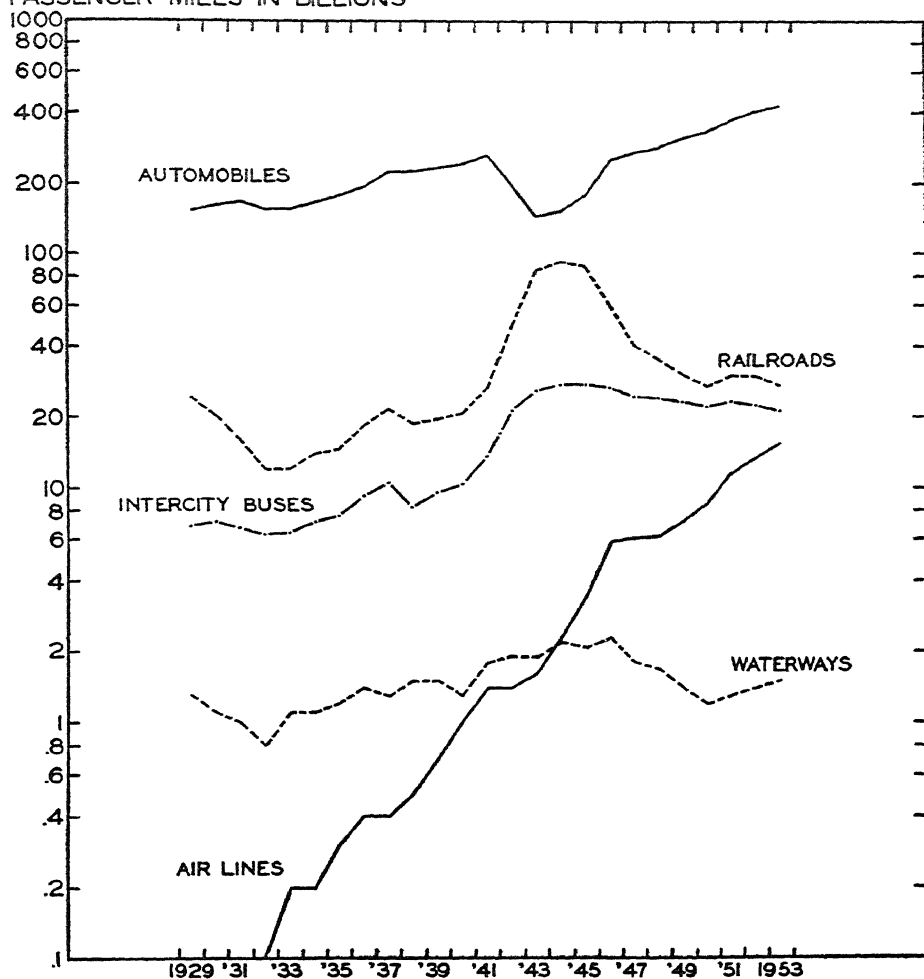


CHART B. Passenger-Miles of Intercity Common Carriers, 1929-1953. (*Business Facts*, 1954, p. 4).

of women gainfully employed. This trend contributes to these expenditures not only by supplying more funds and more of an incentive for such expenditures but also by supplying women with less time for doing this work themselves.

DOMESTIC SERVICE

Although beset by opposing trends, expenditures for domestic service have until recently declined in relation to total expenditures and to income. Act-

ing to increase such expenditures have been the rise in the levels of income, the sharp increase in the number of families and of separate households, urbanization of the population, and the increase in the number of working wives. More important, however, have been the factors acting in the other direction. On the supply side there have been the alternative work opportunities made available during the recent prosperity years, not to mention the higher wages accompanying these opportunities, and the decline in the foreign-born population, one of the two perennial sources of domestic servants, the other source being Negroes. On the demand side has been the rising relative cost of domestic service, the trend until recently to smaller-size families, the progressive enslavement of husbands into household work, the transference to the factory of much of the work formerly done in the home (e.g., cake mixes, prepared foods), the increasing variety and number of "automatic" appliances,¹³ and the progressive rise in income tax rates accompanied by the decline in the relative number of people at the higher income levels.¹⁴

¹³ Automatic as long as someone is present to operate and service them.

¹⁴ Most of these points are discussed in G. J. Stigler, *Domestic Servants in the United States*, National Bureau of Economic Research, Occasional Paper 24, 1950; F. Miller, "Household Employment in the United States," *International Labor Review*, October, 1952, pp. 318-37. Stigler's prediction that Hollywood would produce a commemorative movie when the number of unmarried domestic servants had been reduced to one has not yet come to pass, simply because this diminution has not occurred as yet. Furthermore, in view of the growing popularity of TV, it is a moot point which will become extinct first, domestic servants or Hollywood studios.

Although the factors acting to reduce domestic service expenditures have been dominant during most of the measurable past,¹⁵ such outlays did increase noticeably in 1953 and 1954 and an upswing is not unlikely in future years, particularly if a depression or sharp recession should occur and job opportunities elsewhere dwindle.

RELIGIOUS AND WELFARE ACTIVITIES

Expenditures for such activities represent the outlays of the organizations in these areas and hence reflect only indirectly expenditures of individual consumers for these purposes and to such agencies. In effect, therefore, what we are concerned with is the factors influencing the expenditure programs of these agencies rather than consumer outlays for religious and welfare work as such. These outlays are, however, a principal determinant or, rather, a limiting factor on the expenditures of these agencies since most of their funds come from this source. During the 1940's nearly 75 percent of all private philanthropic receipts came from individuals.¹⁶ In past years such contributions have fluctuated fairly closely with personal disposable income, though the general trend in relation to income has been downward. Contrary to some popular belief, there is no evidence that the increase in tax rates has led to greater

¹⁵ To some extent this decline may well be spurious, especially in the post-World War II years, because payments to babysitters and similar tyrants are undoubtedly underreported.

¹⁶ F. E. Andrews, *Philanthropic Giving* (New York: Russell Sage Foundation, 1950), p. 73.

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charity contributions by individuals.¹⁷

The bulk of the expenditures by agencies in the area has been by religious bodies, as shown by Table 1.

Other than income, the extent of need is the other main determinant of expenditures of such bodies. At the same time, there are various other factors influencing such expenditures that would be present in one year but not in another; the presence or absence of an election year is one example. Hence,

have stimulated private expenditures in this area. The growth of adult education, aided by the increase in savings and in leisure time, has been another major force contributing to private education expenditures. In 1950 there were approximately 30 million adults enrolled in educational groups and programs in the United States, about as many as the number of children and youth taking full-time educational programs.¹⁸

TABLE 1. Percentage Distribution of Religious and Welfare Expenditures by Type of Agency, Selected Years, 1929-1953

Year	Religious Bodies	Social Welfare Agencies	Foreign Relief Agencies	Other*	Total
1929	76.3	18.2	1.0	4.5	100.0
1939	70.3	22.4	2.7	4.6	100.0
1947	58.0	26.3	13.2	2.5	100.0
1953	70.3	22.7	4.4	2.6	100.0

SOURCE: United States Department of Commerce.

* Includes museums, libraries, foundations (excluding education and research), and political organizations.

it is doubtful whether fluctuations in such expenditures are likely to be explained very well by the usual type of regression analysis.

PRIVATE EDUCATION AND RESEARCH

The growing emphasis on higher education (expenditures for which comprised nearly 41 percent of total outlays of this type in 1953) has been one of the main forces behind the rapid increase in expenditures for private education and research. Veterans' educational benefits, though largely paid for by the federal government, may also

¹⁷ Community Chests and Councils of America, *Trends in Community Chest Giving*, 1951, Bull. 157, p. 3; also E. C. Jenkins, *Philanthropy in America* (New York: Association Press, 1950), ch. 7.

Two other major influences have been instrumental in raising consumer expenditures for education, the increase in the number of people of college age and the greater importance placed on higher education in recent years, partly for reasons of technology and partly perhaps even for cultural reasons.

PERSONAL CARE

One would expect prices and income to exert a strong influence on expenditures for permanent waves, beauty treatments, and similar "essentials." Even such supposedly necessary items as haircuts are affected by income, their frequency being increased when income is high and reduced when income declines

¹⁸ *International Directory of Adult Education*, UNESCO, 1952.

and cuts in expenditures have to be affected. It is haircuts and shaves that comprise the bulk of expenditures for personal care in most families, though at higher income levels the little woman's extravagance on permanent waves and shampoos replaces haircuts as the main expenditure.¹⁹ An income distribution variable might, therefore, be pertinent here except for the fact that when all such expenditures are combined their proportion in relation to income or to total family expenditures shows no tendency to rise.²⁰ More relevant, perhaps, over time is the proportion of women that are gainfully employed. An increase in this proportion not only supplies more women with readily available funds to sustain the income of beauty parlors but also provides incentive to do so by virtue of the fact that they are employed and are more frequently out of the home.

Prices seem to be a major relevant factor to the extent that many personal care expenditures are in the postponable, if not luxury, class and can be foregone for alternative expenditures if the cost of personal care gets too high, in the opinion of consumers.

The number of establishments selling such services and the promotional efforts of the proprietors would also probably influence expenditures, but annual data on these subjects are not available. Similarly, changes in fashions and tastes may be pertinent but are not easily measurable either. While the rising levels of aggregate income and the increased employment of women have tended to increase personal care expen-

ditures, trends have been operating in the opposite direction also, particularly the shift in interest after World War II to goods not available during the war and the growing popularity of home permanents (nondurables).

FOREIGN TRAVEL

Expenditures on foreign travel declined precipitously during the depression years of the early 1930's, recovered to near 1929 levels by 1937, however, slumped sharply again during the war, but have risen in the postwar years to new peaks.²¹ A number of forces, many of them conflicting, underlie these fluctuations.²² Acting to reduce expendi-

²¹ There are three service components of foreign travel in the Department of Commerce breakdowns of consumption expenditures—foreign travel by United States residents, personal cash remittances to foreign countries less personal cash remittances to the United States by foreigners, and (as a negative term) expenditures in the United States by foreigners. Only the first of these categories is covered in this section.

²² Probably the most thorough description of trends in foreign travel prior to World War II is to be found in the monograph by August Maffrey, *Overseas Travel and Travel Expenditures, 1919-38*, published in 1939 by the United States Bureau of Foreign and Domestic Commerce. Most of the work that has been published on the subject since then has been pretty meager, being done in connection with the analysis of the balance of international payments, in such publications as *The Balance of International Payments of the United States, 1946-48*, United States Dept. of Commerce, 1950, pp. 67-79; *Survey of Current Business* (March, 1950; March, 1951; May, 1952; September, 1953; September, 1954). Various popular periodicals also conduct surveys of travel expenditures of their readers, including foreign travel, though the main purpose of these is to show prospective advertisers the ease with which their particular readers can be induced to lavish money on travel purposes.

¹⁹ United States Bureau of Labor Statistics, *Family Income, Expenditures and Savings in Ten Cities*, Bull. 1065, 1952, Table 10.

²⁰ *Ibid.*, Table 2a.

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tures on travel have been reduced incomes (in the 1930's); the trend during the 1930's to shorter trips (to the Caribbean rather than to Europe) partly because of the reduced incomes and partly also because of the growth of cruise trips, mainly to nearby areas; the fear of war during 1950 and 1951 probably as well as during the major wars; and the shortage of travel facilities in immediate postwar years. An additional long-run factor is the decline in immigration, which tends to remove a major motive for travel.

On the other side of the picture are forces that appear to be more than offsetting those listed above. Principal among these are the rise in incomes and the availability of funds for vacation travel; the growing number and length of vacation periods, thereby permitting people to travel abroad en masse and see each other; the growing realization that the United States is not the only country in the world; and the increased popularity of, and facilities provided by, air travel in the 1950's. With respect to the period under observation, it seems that fluctuations in incomes and/or savings, and the fear of war are the principal factors explaining changes in travel expenditures. The latter is, of course, not easily measurable, but a rough approximation can be obtained by setting up a dummy variable, taking the value zero in years of more or less full peace (1935-1938, 1947-1949, 1952-1953), the value of 1 in years when there seemed to be real danger of war (1939, 1950-1951), and the value of 2 when wide-scale war was in progress overseas (1940-1941). These values and the years assigned to each are necessarily arbitrary but ought nevertheless to prove useful.

ESTIMATION OF RELATIONSHIPS

The following symbols are used in this part of the study; the first fifteen are per capita in 1930-1935 prices.²³

V_h	housing expenditures
V_b	personal business
V_m	medical care
V_u	household utilities
V_r	recreation
V_o	user-operated transportation
V_p	purchased transportation
V_t	clothing and jewelry service
V_d	domestic service
V_w	religious and welfare
V_e	private education and research
V_c	personal care
V_f	foreign travel
Y	disposable income
S	liquid assets of consumers
I	ratio of rent component of Consumer's Price Index to over-all index
F	average size of family
M	number of physicians and dentists per 1000 population
E	proportion of homes served by electricity
G	proportion of homes served by gas
P	ratio of price component index of personal care to over-all Consumer's Price Index
W	average number of hours worked per week
N	number of passenger vehicles registered per capita
A	proportion of passenger vehicles more than three years old
K	share of income received by the upper 5 percent of income receivers
C	expenditures per capita for clothing over preceding three years
D	ratio of price index for domestic service to over-all Consumer's Price Index
X	a dummy variable reflecting the

²³ Methods of deflation are described in Appendix A.

- fear or danger of war, taking the values, 0 in 1935-1938, 1947-1949, 1952-1953; 1 in 1939, 1950-1951; and 2 in 1940-1941
- B sum of per capita consumer credit outstanding at mid-year and life insurance purchases during the year, deflated by Consumer's Price Index

The variables listed above are those used in the "final" relationships presented in Table 2. The relationships tested on each category of services that were discarded are shown in Table 3 together with the reasons for discarding them. Symbols used in that table are the same as those listed above. All regressions were fitted by least squares. The period of observation was 1935-1941, 1947-1953, the longest period for which data were available for all variables. All the coefficients were estimated by the least squares method. With the exception of recreation and housing only one function is presented to explain the variation in each type of service expenditures; in the other instances two functions were found to yield equally plausible results on the basis of our *a priori* reasoning. In general, the criteria used in selecting the functions cited in Table 2 were, first and most important, that the estimates of the coefficients made "sense" with regard to sign in accordance with the reasoning developed previously; second, that the over-all goodness of fit was statistically significant at the .05 probability level; and third, that where possible the coefficients be likewise statistically significant. The last criterion was applied rather loosely, in part because it was desired to include current income in all the regressions and in part because lack of statistical significance was not

considered to preclude economic meaningfulness all the same.

In effect, we have gone through a two-stage process of elimination in arriving at the regressions shown in Table 2, eliminating factors not considered pertinent on an *a priori* basis and eliminating from those remaining the variables that did not meet the criteria of the statistical analysis.

The results in Table 2 indicate that the *a priori* approach utilized in the preceding section to identify pertinent factors did produce, in this analysis, significant relationships in every instance. This is not to say that every factor advanced as a possible explanation of fluctuations in service expenditures received support from the statistical analysis but rather that for every category some of the *a priori* postulated variables accounted for the bulk of the fluctuations in expenditures and they were by no means the same, i.e., income, in every case.

In general, it may be said that the statistical analysis of the prior hypothesized relationships serves two very useful purposes in this study. On the one hand, it highlights the variety of forces influencing expenditures for different services and provides numerical estimates of these influences as well as of the relative importance of each. Of the four general variables postulated earlier that might have been used (the fifth, population, was of course incorporated in all the variables), only income appears relevant with any frequency. Liquid asset proved relevant in three instances, and price in one form or another also in three instances. Tastes as reflected by a time trend did not work out well in any case, which may be surprising to some. The validity of

TABLE 2. Time Series Expenditure Regression Functions, 1935-1941, 1947-1953

(1) Category of Services	(2) Form of Function	(3) Estimates of Parameters ^{a, b}			(6) Parameter of Third Independent Variable	(7) R ² Adjusted for Sample Size	(8) Relative Influence of Y	(9) Serial Correlation in Residuals ^{b, c}
		(4) β		(5) Parameter of Second Independent Variable				
Housing	$\alpha_1 Y^{\beta_1} F^{\beta}$	2,516,000	-.31 ^d	-.75 ^d	-3.82	.993	16%	No
	$\alpha_1 Y^{\beta_1} S^{\gamma} F^{\beta}$	1744						
Personal business	$\alpha_2 Y^{\beta_2} B^{\beta}$	.2583	-.06 ^e	1.01		.89	6	No
Medical care	$\alpha_3 Y^{\beta_3} S^{\gamma}$	.1251	.47	.455		.996	37	No
Household utilities	$\alpha_4 Y^{\beta_4} G^{\gamma} E^{\gamma}$	.00000025	.37 ^d	1.83 ^e	2.07	.987	20	No
Recreation	$\alpha_5 Y^{\beta_5} W^{\gamma}$	.32743	.80	-.40 ^e		.92	91	No
	$\alpha_5 Y^{\beta_5} K^{\gamma}$	27.95	.29	-.83		.96	17	No
User-operated transportation	$\alpha_6 Y^{\beta_6} A^{\gamma}$	.00000075	2.13	.59 ^e		.96	90	No
Purchased transportation	$\alpha_7 Y^{\beta_7} N^{\gamma}$	.00000056	2.30	-1.34		.92	69	Ycs
Clothing service	$\alpha_8 Y^{\beta_8} C^{\gamma}$	.004620	.59 ^d	.73		.93	45	Ycs
Domestic service	$\alpha_9 Y^{\beta_9} D^{\gamma}$	39.49	.55 ^e	-1.08		.94	28	No
Religious and welfare	$\alpha_{10} Y^{\beta_{10}}$	.64	.38			.60	100	No
Private education and research	$\alpha_{11} Y^{\beta_{11}} S^{\gamma}$	.108	.38 ^d	25 ^d		.96	45	No
Personal care	$\alpha_{12} Y^{\beta_{12}} P^{\gamma}$	7.461	.23 ^e	297		.69	29	Ycs
Foreign travel	$\alpha_{13} Y^{\beta_{13}} 10^{\gamma}$	.1112	.55 ^e	.15		.62	30	Ycs

^a The mean values of the independent variables are as follows:

S	341.90	G	49.23	N	.22	M	1.34	Y	648.30
B	3.68	H	75.75	C	170.10	A	71.27	X	.50
W	158.20	W	39.14	D	130.20	P	146.50	K	23.07

^b Figures are statistically significant at the .01 probability level unless otherwise specified.^c Based on the ratio of the mean-square successive difference to the variance of the residuals. The .05 probability level is the criterion for significance.^d Statistically significant at the .05 probability level.^e Statistically significant at the .01 probability level.

TABLE 3. Time Series Regressions Tested and Discarded for each Category of Services^a

Category of Services	Independent Variables	Reason for Discarding
Housing	Y, Y_{-1}	Lagged income not statistically significant (at .05 level).
Personal business	Y, T	Time not significant
	Y , Pareto's alpha (estimated from income tax returns)	Neither variable significant
	Y, B , Pareto's alpha	Negative income coefficient
	Y, K	Income share not significant
Medical care	Y , doctors per 1000 people, dentists per 1000 people	Dentist variable not significant, doctor variable hardly so.
	Y, T	Time not significant
Household utilities	Y, G , electrical appliance sales per capita	Negative sales coefficient
	Y, T	Time not significant
Recreation	Y, W , proportion of population over sixty-five	Negative income coefficient
	Y , per capita dollar sales of radio and TV sets in past three years	Sales coefficient negative
	Y, T	Time not significant
User-operated transportation	Y, A , vehicle-miles per capita	Vehicle-miles not significant
Purchased transportation	Y, T	Time not significant
Clothing services	Y, T	Time not significant
	Y, K	Income not significant
Domestic service	Y, W , Pareto's alpha dollar sales of washing machines per capita in current and preceding four years	Negative income coefficient; no variables significant
Religions and welfare	Y, Y_{-1}	Lagged income not significant
	Y, T	Time not significant
Private education	Y, T , proportion of people aged 15-19	Income and age proportion variable negative
	Y, T	Time not significant
Personal care	Y , proportion of women in labor force	Latter coefficient negative
	Separate income variables for	Income coefficient negative
	Y, T prewar and postwar	Both income coefficients negative
Foreign travel	S, X	Liquid assets not significant
	Y, T	Income coefficient negative
	Y, S	Neither coefficient significant

^a All functions were linear logarithmic in form (with time as an exponential) fitted by least squares to the periods 1935-1941, 1947-1953.

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a time trend for reflecting such changes may well be questioned, however. Even income falls far short of possessing the significance usually attributed to it. As is evident from Column 8 of Table 2, income accounts for half or more of the *explained* fluctuations in expenditures for only four of the fourteen regression equations presented in this table. Most notable perhaps are the housing, personal business, household utilities, and recreation regressions, where the income effect turns out to be very small, the bulk of variation being accounted for by the other variables. However, the two recreation regressions shown in Table 2 point up the fact that the importance of income by this method can vary substantially, depending on what other variables are included in the regression equation. With length of the work week as an extra variable, the income elasticity of recreation expenditures is seen to be .8, while with income share of the upper 5 percent the elasticity drops to .3.²⁴

It is interesting to note that most of the specific factors appearing in the regression equations reflect directly the influence of advances in technology. This may seem rather surprising since technology is generally associated with products rather than services. Yet, the rise in utility expenditures was due to the increase in the number of homes served by gas or electricity; higher outlays for recreational services was made possible by the reduction in hours of work, itself due in part to technological advances; and the drastic shift in trans-

²⁴ Though income is correlated with both of these additional variables, the correlation with income share is higher than with length of the work week ($r^2_{y,w}$ is .91, $r^2_{y,w}$ is .74), which may account for most of the above difference.

portation expenditures from public to private means of conveyance was mainly the result of increased production of and improvements in automobiles. Only in clothing and personal business service outlays are there important specific influencing factors not directly related to technological change.

The second useful purpose served by the statistical analysis is the light it throws on which variables previously thought to be related to expenditures for particular services are not actually related, at least during the period studied, and on which of two seemingly equally likely alternative choices is most closely related to expenditures. Thus, user-operated transportation (a fancy title for auto repairs) was found to be influenced far more by the number of older cars outstanding than by vehicle-miles operated. Radio and television sales (cumulated) was not of much relevance to expenditures for recreational services, nor was liquid assets of much relevance to outlays for foreign travel.

At the same time, the results in Table 2 indicate that much additional work remains to be done. For three types of service outlays—religious and welfare, personal care, foreign travel—one third or more of the variations in expenditures remain to be explained, and even for the other services it is likely that other variables need to be considered and even that some not considered are more pertinent than those that were; this is, in fact, one of the shortcomings of this basic approach.

As a final remark to Table 2, it might be noted that the principal objective of this part of the study was to explain the fluctuations in service expenditures during the period of observation, 1935–1941, 1947–1953, rather than to derive

functions for purposes of extrapolation. It should be recognized that the value of these functions for extrapolation is likely to be limited, especially since conditions for many services in future years may not be too similar to those in the period of observation.²⁵

One might well inquire, at this point, regarding the manner in which income and other variables have influenced service expenditures in the aggregate. The results obtained in this respect, using the Department of Commerce price-deflated aggregate service expenditures series placed on a per capita basis as the dependent variable, were as follows:

1. Income, liquid assets, and income share were found to influence total service expenditures. Any combination of two of these variables related to expenditures produced statistically significant regression coefficients whereas when all three variables were used simultaneously only the income regression coefficient was statistically significant. This may well be due to the relatively few degrees of freedom on which the analysis was based.

2. On the average, a 10 percent increase in income per capita was accompanied by a 4 to 5 percent increase in total service outlays, whereas a corresponding increase in liquid assets hold-

ings was accompanied by a 2 percent increase in outlays. In addition, a 10 percent decline in the income share of the upper 5 percent of income receivers was accompanied by an increase of about 3 percent in total outlays.²⁶ It is interesting to note that the regression of service outlays on income alone yields a misleadingly high elasticity of .85.

Although the goodness of fit of these equations is high, it is not as high as that obtained for some of the components of services by the more detailed analysis (Table 2). Considering the heterogeneous nature of services, sounder results would seem obtainable by examining each component separately than by working with the total, though the latter may nevertheless be of use for descriptive purposes.

COMPARISON WITH STANDARDIZED APPROACH

The second objective of this study was to compare the income elasticities obtained by the above approach with those that would be obtained by computing the regression of each type of service expenditures on the same set of independent variables. For the latter purpose, we use income and time, which are perhaps the most commonly employed variables in this regard.²⁷ The income elasticities and goodness of fit

²⁵ Such as the effect of the growing importance of radio and television repairs as part of the service component of recreation expenditures. A major reason for the cautious approach to extrapolation adopted above is a recent study of the writer's which came up with the rather nerve-shaking result of zero and negative relationships between the goodness of fit of several series of functions in the periods of observation and predictive accuracy for times outside the periods of observation. R. Ferber, "Are Correlations Any Guide to Predictive Value?" *Applied Statistics*, V, 2 (1956), 113-121.

²⁶ The equations are:
 $V = 25.8Y^{.41} \quad S^{.16}K^{-.83} \quad R^{*2} = .961$
 $V = 4.26Y^{.46} \quad S^{.23} \quad R^{*2} = .963$
 $V = 258Y^{.43} \quad K^{-.81} \quad R^{*2} = .960$

All regressions coefficients are statistically significant at the .05 probability level except those for S and K in the four-variable regression.

²⁷ See, for example, L. J. Paradiso and Clement Winston, *op. cit.*, p. 1.

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obtained from least squares regressions of each type of service expenditures on these independent variables are shown in Table 4 along with the corresponding estimates from the preceding section.

Easily the most striking thing about this table is the lack of correspondence between the two sets of income elasticity estimates. In only one instance, domestic service, are the two estimates about the same. For the other twelve categories, the pairs of estimates differ

sion turns out to be -3.3 . The explanation is a simple one. Per capita expenditures for foreign travel declined during most of the period of observation while income rose. With time as the other independent variable, the brunt of the decline was attributed by the regression process to income; hence the high negative income elasticity.²⁸ With fear of war (X) as the second independent variable, a strong negative relationship emerges between travel expenditures

TABLE 4. Comparison of Income Elasticities and Goodness of Fit by Two Approaches

Category of Services	Income Elasticity		R^2 Adjusted for Sample Size	
	<i>A Priori</i> Approach	Standardized Approach	<i>A Priori</i> Approach	Standardized Approach
Purchased transportation	2.30	1.02	.92	.86
User-operated transportation	2.13	1.00	.96	.96
Recreation	.80	.57	.92	.94
Clothing service	.59	.94	.93	.93
Domestic service	.55	.56	.94	.71
Foreign travel	.55	-3.27	.62	.39
Medical care	.47	1.11	.996	.95
Religious and welfare	.38	.07	.60	.61
Private education	.38	.14	.96	.97
Household utilities	.37	1.68	.987	.93
Personal care	.23	.65	.69	.82
Personal business	-.06	-.73	.89	.72
Housing	-.31	1.31	.993	.91

among each other not only as to level but as to relative magnitude as well. Elasticities that were high by the *a priori* approach are just as likely to be low as to be high by the standardized approach. The coefficient of correlation between the two sets of estimates is $-.61$, and even when the extreme case of foreign travel is excluded the correlation is still slightly negative ($-.15$).

Foreign travel is clearly the outstanding example of the discrepancies produced by the two approaches. Possessing a relatively high income elasticity of .55 by the *a priori* approach, its elasticity based on the income-time regres-

sion turns out to be -3.3 . The explanation is a simple one. Per capita expenditures for foreign travel declined during most of the period of observation while income rose. With time as the other independent variable, the brunt of the decline was attributed by the regression process to income; hence the high negative income elasticity.²⁸ With fear of war (X) as the second independent variable, a strong negative relationship emerges between travel expenditures

²⁸ The net regression of expenditures on time is positive, though not statistically significant.

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consequence of such an approach, for it makes no allowance for distinctive factors that may affect expenditures for only a few types of services.

Although the differences between the income-elasticity estimates for most of the other services can be explained on a similar basis, this does not detract from the fact that the more standardized approach, though a very simple one, can yield a completely misleading set of income elasticities. Thus, for this section of consumer expenditures, the standardized approach appears to yield a highly misleading set of income-elasticities. Notably, the effect of income on expenditures is unduly high (in an absolute sense) for foreign travel, medical services, housing and household utilities, and is underestimated substantially for purchased transportation, automobile services and recreation. This is not to deny the possibility that there may be occasions when the standardized approach and not the other approach will produce the "right" function. Personal care may well be such an instance in the present study; both coefficients are statistically significant in the income-time regression whereas income is not statistically significant, at the .05 probability level, in the income-price regression (Table 2). By the goodness-of-fit criterion, the income-time regression is also considerably superior, for whatever significance that may have.²⁹ Yet there is no doubt that in the great majority of problems, such will not be the result—the standardized approach is, after all, only a special case of the *a priori* approach.

²⁹ For a discussion of this question, see R. Ferber, "Are Correlations Any Guide to Predictive Value?" *Applied Statistics*, V, 2 (1956), 113–121.

The main results of this study can be summarized briefly as follows:

1. The factors explaining the variations in per capita outlays for the thirteen main components of services deflated for price changes during the periods 1935–1941, 1947–1953 varied substantially with the type of service. In most cases, the relevant variables vary substantially from one type of outlay to another, representing generally factors distinctive to the particular type of expenditure.

2. The regression functions derived by *a priori* consideration of the relevant variables accounted for the great bulk of the variation in each type of service outlays. Only income, liquid assets, and relative prices appear with any frequency, and the frequency of income is to a large extent a consequence of the study design.

3. Many of the distinctive factors contributing to changes in expenditure patterns appear to be the result of either changes in economic conditions or the availability of new products leading to shifts in expenditure patterns.

4. Income fell far short of possessing the importance usually ascribed to it. For three types of services, this variable did not even prove statistically significant (at the .05 probability level), and in several others income had less influence on outlays than the other independent variables considered. It is likely that at least in aggregate time series studies, the influence of income on consumption expenditures is greatly exaggerated.

5. The income elasticities obtained from regressions of per capita expenditures for each type of services, in turn,

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on income and a time trend bear no relation to the corresponding elasticities obtained by *a priori* consideration of relevant variables.

In closing it deserves to be stressed that extrapolation of most of these findings to income levels or periods beyond the period of observation is hazardous. To judge from a separate analysis of service outlays from cross-section data, significant shifts in services-income relationships occurred between 1935-1936 and 1950, due in part to changes in tastes and availability of products and in part, undoubtedly, to the higher levels of income prevailing in the latter years. All indications are that further changes of this nature will continue to take place.

APPENDIX A: PRICE INDEXES FOR AGGREGATE SERVICE EXPENDITURES

In this section are described the methods used to deflate each of the main components of service expenditures covered in this study. Table B-2 in Appendix B presents all the price indexes compiled in the process.

The indexes described below are in general only rough approximations to the true price movements of the various components of service expenditures and represent, as noted before, a lot of duplicative and unproductive effort. Similar indexes have already been compiled by the United States Department of Commerce in more detail and with the aid of more extensive information but the Office of Business Economics has refused to release either these indexes or the information used in their compilation. It is to be hoped that the current tendency to release hitherto classified information by the military services may even some day spread to the Office of Business Economics.

1. Housing: deflated by rent component of the CPI.
2. Personal business: broken down into components as follows:
 - a. Brokerage charges: deflated by index of brokerage charge on purchase of 50 shares of stock at \$20 per share, a rough estimate of the average size transaction on listed exchanges.
 - b. Expense of handling life insurance: deflated by index of weekly wages of nonsupervisory insurance workers computed from BLS data.
 - c. Bank and trust charges, and services furnished without payments by financial intermediaries: deflated by index of estimated wages of nonsupervisory bank employees computed from BLS data.
 - d. Legal services: deflated by the physicians' fees component of the CPI on the assumption that prices of the two types of services fluctuate together. (By hindsight an index of average wages and salaries per employee in legal services, compiled from the various *National Income Supplements*, might have been better.)
 - e. Interest on personal debt: deflated by index of Household Finance Corporation average interest charge.
 - f. Other: deflated by CPI.
3. Medical care: deflated by the medical care, excluding drugs, component of the CPI.
4. Household utilities: deflated by the gas and electricity, and residential telephone components of the CPI, weighted by 2 and 1, respectively, the CPI weights.
5. Recreation: deflated by the motion picture admissions component of the CPI.

6. User-operated transportation: deflated by the auto repair component of the CPI.
7. Purchased transportation: deflated by streetcar and bus fares, and rail fares components of the CPI, weighted respectively by local and intercity transportation.
8. Clothing services: deflated by the laundry service component of the CPI.
9. Domestic service: deflated by the domestic service component of the CPI.
10. Religious and welfare: deflated by equally weighted index of average wages and salaries per general government employee other than military, and public education, and wholesale price index for all commodities other than farm products and foods.
11. Education: deflated by index of average wages and salaries per employee in public education, and wholesale price index for all commodities other than farm products and foods, weighted respectively by .75 and .25.
12. Personal care: deflated by men's haircuts, and beauty shop service components of the CPI, weighted by aggregate expenditures on these items.
13. Foreign travel: deflated by a weighted average of international air fares per passenger-mile (from

the CAA *Statistical Handbook of Civil Aviation*) and of average expenditures for ship fares by travelers. The 1935-1938 figures for the latter were computed from data in *Overseas Travel and Travel Expenditures, 1919-38*, United States Department of Commerce, 1939, using the assumptions given in Appendixes D and E of this publication. The 1939-1941 figures are rough extrapolations of the 1935-1938 figures based on examination of passenger fares and passenger travel. Postwar ship fares for 1949 and 1950 are from the *Survey of Current Business*, May, 1951, the figures for the other years being extrapolations of the ratio of fares to expenditures overseas for 1949-1950 multiplied by expenditure figures provided in the *Survey of Current Business* for March, 1950, May, 1952, June, 1953, and September, 1954. The weights for combining the two series were also derived from the above sources.

Although it is difficult to arrive at an evaluation of the relative reliability of these indexes without a fair amount of work (and without data presently not available), it is the writer's judgment that the price indexes for personal business, recreation, religious and welfare, and foreign travel are likely to be less reliable than the others.

APPENDIX B: SUPPLEMENTARY TABLES

TABLE B-1. Service Expenditures per capita by Major Components, Current Prices 1929-1954

Year	Housing	Personal Business	Medical Care	Household Utilities	Recreation	User-operated Transportation	Purchased Transportation	Clothing and Jewelry	Domestic Service	Religious and Welfare	Private Education	Personal Care	Foreign Travel	Total Services ^a	Consumption Expenditure
1929	\$94	\$42.0	\$23.0	\$19	\$14.0	\$7.5	\$14.0	\$10.0	\$14.0	\$10.0	\$5.4	\$4.3	\$5.2	\$262	\$618
1930	89	33.0	22.0	19	13.0	6.1	12.0	9.4	12.0	10.0	5.5	4.2	5.0	240	576
1931	83	28.0	19.0	19	12.0	5.1	10.0	7.7	9.2	9.1	5.4	3.8	3.6	215	495
1932	72	24.0	16.0	18	9.5	4.1	8.4	5.9	6.7	7.8	4.6	3.2	2.7	183	395
1933	63	33.0	15.0	17	8.5	4.1	7.6	5.1	5.8	6.9	3.8	2.7	2.1	175	369
1934	60	33.0	16.0	17	9.3	4.5	8.0	5.5	6.7	6.9	3.8	3.0	2.2	176	411
1935	60	24.0	17.0	18	9.9	4.7	8.4	5.9	7.2	6.8	4.0	3.4	2.4	172	442
1936	62	26.0	18.0	19	11.0	5.4	9.2	6.5	7.9	7.0	4.3	3.7	2.9	183	489
1937	65	28.0	19.0	19	12.0	5.6	9.5	7.2	9.2	7.0	4.7	4.1	3.4	204	522
1938	68	27.0	19.0	20	12.0	5.2	9.1	6.9	7.9	7.1	4.8	3.9	2.9	194	498
1939	69	27.0	20.0	20	12.0	6.0	9.4	7.0	8.6	7.2	4.8	4.0	2.5	197	516
1940	71	28.0	20.5	21	13.0	6.4	9.6	7.5	9.2	7.7	4.8	4.0	1.3	204	545
1941	75	29.0	22.0	23	14.0	7.5	11.0	8.7	9.3	8.0	5.3	4.2	1.4	218	615
1942	80	28.0	24.0	25	16.0	5.7	14.0	10.0	11.0	9.0	6.0	4.6	.9	234	666
1943	83	28.0	26.0	27	18.0	5.4	20.0	12.0	12.0	10.5	7.0	5.4	1.0	255	737
1944	86	30.0	29.0	29	19.0	6.4	20.0	13.0	14.0	12.0	7.0	6.1	1.3	273	795
1945	89	32.0	31.0	31	21.0	8.4	20.0	14.0	15.0	12.0	7.0	6.4	1.9	289	872
1946	96	35.0	37.0	32	26.0	35.0	22.0	17.0	15.0	14.0	8.2	6.9	3.2	326	1,033
1947	107	40.0	41.0	35	26.0	17.0	21.0	19.0	16.0	14.0	10.0	7.0	4.1	357	1,146
1948	120	45.0	44.5	38	26.0	18.0	22.0	19.0	16.0	15.0	11.0	7.0	4.7	386	1,211
1949	130	48.0	46.0	41	26.0	18.0	21.0	19.0	16.0	15.0	12.0	6.9	5.5	404	1,210
1950	141	54.0	48.5	44	26.0	18.0	20.0	19.0	18.0	16.0	13.0	6.9	5.9	430	1,279
1951	151	57.0	50.0	48	26.0	21.0	21.0	19.0	18.0	17.0	14.0	7.1	5.8	455	1,349
1952	163	60.0	53.0	52	27.0	22.0	21.0	20.0	18.0	18.0	15.0	7.2	6.6	483	1,391
1953	174	66.5	56.0	56	27.5	23.0	21.0	20.0	19.0	19.0	15.5	7.4	7.0	512	1,442
1954	183	70.0	59.0	60	28.5	25.0	20.0	20.0	17.5	20.0	16.0	7.9	7.5	534	1,456

Source: United States Department of Commerce, *National Income Supplement, 1954 Edition*, pp. 216-17, and *Survey of Current Business* (July, 1955), p. 19^a Includes expenditures for foreign travel by US residents only.

TABLE B-2. Price Indexes for Service Expenditures by Type of Service, 1935-1954

Year	Housing	Personal Business	Medical Care	Household Utilities	Recreation	User-operated Transportation	Purchased Transportation	Clothing and Jewelry	Domestic Service	Religious and Welfare	Private Education	Personal Care	Foreign Travel	All Services	All Consumption
1935	94.2	92.7	98.8	102.3	95.7	100.0	106.9	100.5	100.0	97.1	95.3	92.8	99.1	96.1	98.5
1936	96.4	101.2	99.3	100.8	97.7	100.0	100.2	98.0	100.0	97.1	97.8	94.1	98.2	97.8	99.2
1937	100.9	103.5	100.4	99.2	101.3	100.0	95.0	100.0	100.0	104.4	101.7	102.0	97.2	101.3	102.8
1938	104.1	96.7	100.7	99.2	103.4	100.0	97.6	101.0	100.0	100.9	102.7	105.4	101.6	102.4	100.4
1939	104.3	103.4	100.9	99.0	101.9	99.8	99.4	100.5	100.0	100.5	102.4	105.6	103.6	102.4	99.0
1940	104.6	103.5	101.0	98.5	104.3	99.5	97.0	100.5	102.8	102.5	104.8	105.8	105.6	103.0	100.1
1941	106.4	104.9	101.6	98.0	109.8	103.9	95.8	102.9	111.3	111.1	108.1	109.0	107.4	106.5	106.7
1942	108.8	111.7	104.6	99.6	115.7	113.0	99.8	110.6	130.4	129.4	112.8	121.1	n.c. ^a	112.3	110.3
1943	108.7	121.2	110.2	100.3	126.0	114.5	102.1	114.7	173.8	150.2	118.6	142.0	n.c.	118.3	130.4
1944	109.1	128.6	114.6	101.2	145.7	115.9	103.3	122.8	221.5	154.5	125.8	158.5	n.c.	123.4	137.7
1945	109.5	134.6	117.7	101.2	153.2	116.7	103.9	124.7	257.7	156.0	134.5	166.7	n.c.	120.6	142.9
1946	110.1	144.6	124.8	99.4	157.7	120.4	105.7	131.7	274.5	164.6	145.4	180.1	n.c.	132.9	153.9
1947	113.6	150.4	135.3	99.9	165.0	130.4	110.6	144.2	278.5	187.2	165.8	190.5	173.9	143.0	170.5
1948	121.2	152.1	144.4	103.4	166.7	138.0	123.9	153.0	282.4	199.7	184.6	197.0	176.8	151.5	180.2
1949	126.4	151.0	149.7	106.7	171.0	141.4	137.7	161.7	283.8	204.0	191.0	200.4	190.8	155.7	178.7
1950	131.0	149.4	153.1	110.0	170.3	144.4	148.9	165.9	284.2	210.8	199.4	203.0	185.3	159.3	181.0
1951	136.2	152.2	160.9	111.3	172.8	155.2	161.0	178.0	259.9	230.6	215.3	217.7	178.6	166.0	193.5
1952	141.9	154.6	170.6	113.5	174.3	158.9	169.1	181.9	317.8	236.7	223.6	231.9	173.4	171.8	196.7
1953	149.4	153.1	173.9	116.8	182.7	167.5	176.1	188.6	337.9	241.6	232.0	238.5	177.0	178.9	199.1
1954	154.9	155.5	174.7	116.8	195.5	173.7	190.0	190.7	343.2	247.8	243.0	244.6	n.c.	183.3	200.8

Sources: See Appendix A.

^an.c., not computed.

TABLE B-3. Service Expenditures per capita by Major Components, 1935-1939 Prices, 1929-1954

Year	House- hold Utilities	Medical Care	Personal Business	Recrea- tion	User-operated Transportation	Purchased Transportation	Clothing and Jewelry	Domestic Service	Religious and Welfare	Private Education and Research	Personal Care	Foreign Travel	Total Services*	Consumption Expenditures
1929	n.a. ^b	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	\$208	\$517
1930	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	200	481
1931	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	191	464
1932	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	176	418
1933	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	147	347
1934	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	174	425
1935	\$64	\$16.9	\$26.4	\$10.4	\$4.7	\$7.8	\$5.9	\$7.2	\$7.0	\$4.2	\$3.6	\$2.4	179	449
1936	64	26.2	18.3	11.3	5.4	9.1	6.6	7.9	7.2	4.4	3.9	2.9	187	493
1937	65	27.5	19.0	12.0	5.6	10.0	7.2	9.2	6.7	4.6	4.1	3.5	193	508
1938	65	27.7	18.6	11.3	5.2	9.3	6.9	7.9	7.0	4.6	3.7	2.9	188	496
1939	66	26.2	19.4	20	6.0	9.5	7.0	8.6	7.1	4.7	3.8	2.5	192	521
1940	68	26.7	20.3	22	6.5	9.9	7.5	9.0	7.5	4.6	3.8	1.2	198	544
1941	71	27.9	21.4	23	7.2	11.0	8.5	8.3	7.2	4.9	3.8	1.3	204	576
1942	74	24.9	22.7	25	5.1	14.5	9.0	8.4	6.9	5.4	3.8	n.c. ^c	208	558
1943	96	23.2	23.3	27	4.8	19.2	10.6	6.7	7.0	5.9	3.8	n.c.	215	565
1944	79	23.3	25.1	28	5.6	19.6	10.7	6.2	7.8	5.6	3.8	n.c.	221	577
1945	81	23.6	26.0	30	13.9	19.7	11.5	6.0	8.0	5.2	3.8	n.c.	228	610
1946	87	24.4	29.6	33	16.5	12.0	13.3	5.5	8.2	5.7	3.8	n.c.	246	674
1947	94	26.4	30.7	35	15.9	12.9	13.0	5.8	7.5	5.9	3.7	2.4	249	672
1948	99	29.5	30.8	37	15.7	13.4	12.5	5.7	7.7	5.9	3.6	2.7	255	672
1949	103	31.6	30.7	38	15.2	12.9	11.6	5.1	7.5	6.3	3.4	2.9	259	677
1950	107	36.1	31.7	40	15.3	12.7	11.3	6.2	7.7	6.5	3.4	3.2	269	707
1951	111	37.1	31.4	43	15.3	13.3	13.0	6.2	7.3	6.4	3.3	3.2	273	697
1952	115	38.7	31.2	46	15.5	13.9	10.9	5.7	7.7	6.6	3.1	3.8	281	707
1953	116	43.5	32.3	48	14.0	11.8	10.7	5.6	7.7	6.3	3.1	4.0	285	723
1954	118	45.0	33.8	51	14.4	10.5	10.5	5.1	7.9	6.6	3.2	—	290	725

Source: Tables B-1 and B-2 in this Appendix.

* Sum of individual categories will not necessarily equal the total because latter is the series deflated by Department of Commerce and former are deflated by author because Department of Commerce would not release its component indexes.

^b n.a. not available.^c n.c. not computed.

TABLE B-4. Data for Independent Variables Used in Time Series Regression

	Y	S	F	M	E	G	P	W	N	A	C	D	B	K
1935	467	223.6	3.99	1.286	65.81	46.95	92.8	36.6	1769	77.3	12.3	101.9	134.1	26.3
1936	522	228.4	3.95	1.289	67.05	47.15	94.1	39.2	1881	70.8	12.8	100.9	140.6	26.7
1937	537	229.1	3.90	1.300	67.97	47.69	102.0	38.6	1972	65.8	13.8	97.4	142.4	26.1
1938	502	238.5	3.86	1.307	68.66	47.48	105.4	35.6	1941	65.6	14.8	99.2	130.2	25.5
1939	541	247.5	3.83	1.318	69.35	46.98	105.6	37.7	1994	70.7	15.5	100.6	137.1	25.8
1940	575	256.3	3.77	1.329	69.98	46.93	105.8	38.1	2076	74.4	15.7	102.6	145.0	25.0
1941	664	261.9	3.71	1.339	71.09	47.21	109.0	40.6	2215	68.1	15.2	105.8	152.3	24.0
1947	737	501.6	3.68	1.376	78.42	50.92	190.5	40.4	2132	87.5	20.4	174.5	150.5	20.9
1948	747	481.3	3.60	1.363	80.02	50.49	197.0	40.1	2265	77.1	20.7	164.3	149.5	20.6
1949	744	498.2	3.54	1.359	81.84	50.49	200.4	39.2	2433	73.4	22.2	166.7	161.1	20.7
1950	810	509.0	3.49	1.347	83.86	50.94	203.0	40.5	2650	69.4	22.1	165.3	201.2	21.4
1951	789	465.0	3.46	1.371	86.12	51.70	217.7	40.7	2753	63.6	19.5	159.4	176.5	20.7
1952	795	466.7	3.45	1.367	87.95	52.46	231.9	40.7	2783	66.2	18.8	167.4	200.7	20.4
1953	820	481.3	3.41	1.369	88.33	52.64	238.5	40.5	2901	71.3	18.8	176.6	226.2	20.7

DEFINITIONS AND SOURCES

Y disposable income per capita in 1935-1938 prices, United States Department of Commerce, *National Income, 1954 edition*.
S liquid bank assets of consumers per capita in 1935-1939 prices, United States Savings and Loan League, *Savings and Loan Fact Book, 1954*; (United States Savings and Loan League), p. 14.
F average size of family, United States Department of Commerce, *Statistical Abstracts of the United States, and Historical Statistics of the United States*.
M number of physicians and dentists per 1000 population, United States Department of Commerce, *Statistical Abstracts of the United States*.
E proportion of homes served by electricity, data furnished by Electrical Merchandising Magazine.
G proportion of homes served by gas, United States Department of Commerce, *Statistical Abstracts of the United States*.
P ratio of price component index of personal care to overall Consumers' Price Index, United States Department of Labor, *Monthly Labor Review*.
W average number of hours worked per week, United States Department of Labor, *Handbook of Labor Statistics*.
N number of passenger vehicles registered per capita, Automobile Manufacturers Association, *Automobile Facts and Figures*.
A proportion of passenger vehicles more than three years old, *Ibid*.
C expenditures per capita for clothing over preceding three years, United States Department of Commerce, *National Income, 1954 edition*.
D ratio of price index for domestic service to overall Consumers' Price Index, United States Department of Labor, *Consumer Prices in the United States, 1942-48*, Bull. 966, *Consumer Prices in the United States, 1949-52*, Bull. 1165, and unpublished data of the Department of Labor.
B sum of per capita consumer credit outstanding at mid-year and life insurance purchased during the years delated by Consumers' Price Index, United States Department of Commerce, *Statistical Abstracts of the United States*, and Institute of Life Insurance, *Life Insurance Fact Book*.

A DYNAMIC ELEMENT IN CONSUMPTION: THE TV INDUSTRY

Alfred Oxenfeldt

This paper is concerned with the dynamism in consumption that arises from major consumers' good innovations. Its scope is modest, however. It represents a case study of TV-set sales and the economic impact of the television industry in its infancy and early youth, rather than a general analysis of the relative stability of consumer outlays.

This case study of the TV-set manufacturing industry singles out two problems for particular emphasis: possible differences in factors determining the demand for new and established products; and the circumstances that govern the net impact of a new consumer product upon total economic activity. One is tempted to generalize from a case study; to do so would be particularly hazardous in this case for TV is highly unrepresentative of new consumers' goods in many essential respects.

DEMAND DETERMINANTS FOR INNOVATIONS AND OLD PRODUCTS COMPARED

In formal economic doctrine and in most econometric work, the market de-

mand for almost every *established* product is taken to depend primarily upon price and income. (Sometimes account is taken of such factors as the size and age of the stock of goods, and the availability and price of substitutes and jointly consumed products.) In most cases, correlations between sales of a product and its price and general income movements have been found to give fairly reliable estimating equations for periods free from major disturbances.

Accordingly, we shall explore the influence of price and income upon TV-set sales in the early stages of the product's life to see whether, in this case anyhow, these factors can explain sales. When the evidence has been reviewed, the other influences on the early sales of TV sets will be discussed.

THE EFFECT OF PRICE ON SALES OF TV SETS

The TV industry is blessed with an unusually accurate measure of the average wholesale price for TV receivers (i.e., the price received by manufacturers) between 1947 and 1952. Later data are available from other reliable

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sources, but are not published. (The data are a by-product of the patent licensing arrangements in the industry.) Average wholesale TV-set prices dropped sharply during the early postwar years. For example, the average price of consoles, which were the most widely purchased type of set at the time, declined from \$429 in 1947 to \$214 in 1949; table models fell much less, but even these declined from \$217 to \$155 in the same two-year period. Even as average price was falling sharply, average screen size was increasing.

determining TV-set sales. Sales were highest when unit price was lowest (see Table 1). Especially is this statement true when one eliminates, by whatever method, the big jump in set sales that occurred in 1950 because of the Korean emergency. The general pattern described by Chart B is of a steady decline in price and a steady rise in unit sales.

However, close examination of the price and sales data reveals that there was very little relationship between price and set sales. Chart B plots these data for the years 1947 to 1954 in a

TABLE 1. TV Prices and Sales, 1946-52

Year	Average TV Price ^a (dollars)	Set Sales ^b (units)	Set Sales ^b (thousand dollars)
1946	—	6,476	1,295.2
1947	288	178,571	51,428.4
1948	234	969,800	225,963.4
1949	189	2,970,100	574,209.4
1950	181	7,355,100	1,397,469.0
1951	177	5,311,888	944,028.7
1952	172	6,193,644	1,063,634.5
1953	170 ^c	6,870,068	1,170,151.0
1954	142 ^d	7,404,578	

^a Average price received by manufacturer, based on RCA licensee data.

^b Sales by factories as reported in RTMA *Statistical Yearbook*.

^c Statement by Frank W. Mansfield, Director of Sales Research, Sylvania Electric Products, Inc., and reprinted in *Retailing Daily*, September 20, 1954.

^d First half 1954 average.

No precise method exists for adjusting price measurements for the important quality improvements that took place in TV; suffice it to say that the price decline indicated by the data of Table 1 substantially understates the "real" drop in price relative to the functional value of the product. One might add that the improvement in quality probably was greater during the early postwar years than during recent years.

TV prices have been charted against TV-set sales in Chart A. Superficially, this chart presents a fairly convincing illustration of the potency of price in

way that highlights the relationship between TV prices and unit sales. It shows the percentage change in average price paid TV manufacturers from the preceding year and the percentage change in unit sales from the preceding year. This technique could be applied to other time periods than the calendar year and would yield somewhat different results, though the lack of close or consistent relationship would remain.

In interpreting the foregoing data on TV-set sales and average price, one should take account of the conditions

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prevailing at the time. In particular, the Korean emergency created a shortage scare that caused TV-set sales to skyrocket; when the scare passed, sales declined sharply. Also, during the period covered by the data presented in Charts A and B, the number of potential

price on sales during the early years of a new product is to be expected; however, the pattern traced by the data is likely to be, at least superficially, one showing a steady rise in unit sales and a steady decline in price. But the rise in sales is connected only slightly, if at

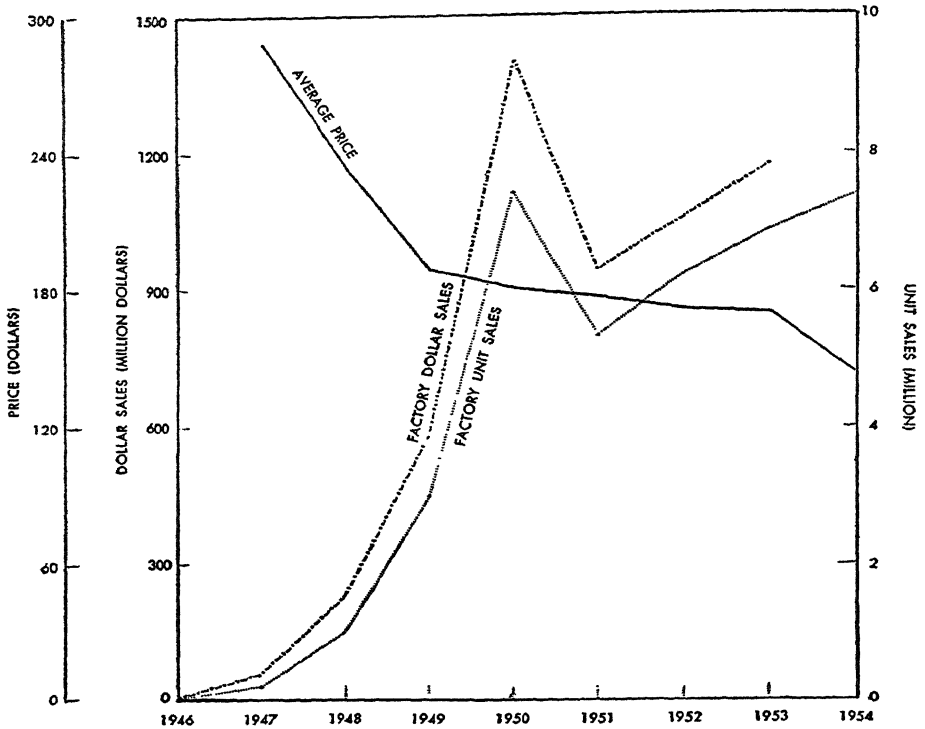


CHART A. Average Price and Factory Sales of TV Sets.

customers for TV sets grew substantially as the number of communities that could receive an acceptable TV signal increased. Consequently, wholly apart from all other possible influences such as price and income changes, the spread of TV transmission facilities to new communities would have led to greater TV-set sales.

The lack of a strong influence of

all, with the change in price. Sales rise as the product becomes better known, has "proved itself," and as social pressures cause consumers to purchase in order to conform; prices, on the other hand, decline as competition is intensified and costs decline with volume production.

As the TV industry matured, the effect of price upon TV-set sales ap-

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parently became more pronounced. After a period of substantial price stability between 1949 and 1953 (during which fluctuations in sales were large, it should be noted) TV receiver prices dropped sharply in 1954. This sharp cut in price resulted from general pessimism about the sales outlook at

when industrial production generally had fallen approximately 10 percent.

Thus, up to 1953, anyhow, the influence of price on TV-set sales apparently either was slight or was offset by stronger "outside" factors. Measurement of the effect of price on sales is difficult even under the best of cir-

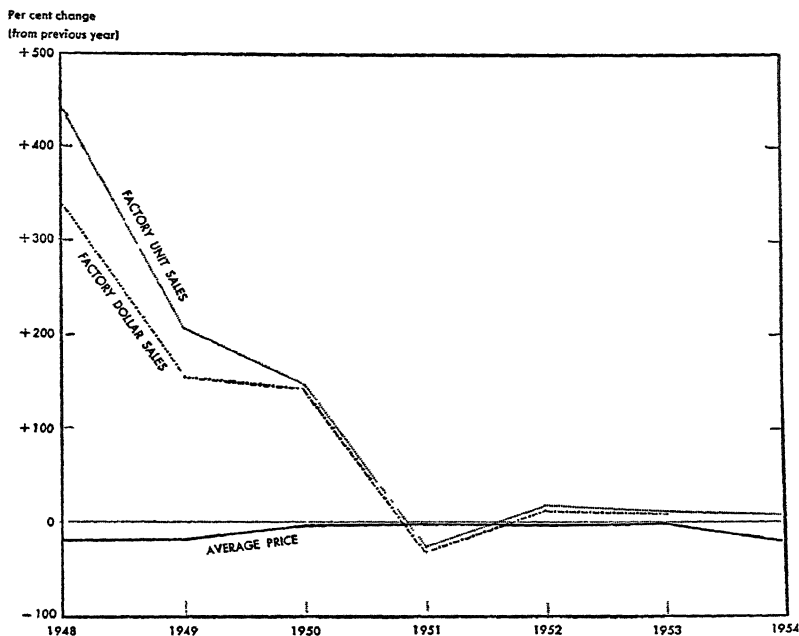


CHART B. Percent Change from Preceding Years of Average Price, Unit Sales, and Dollar Sales of TV Sets.

the end of 1953; in the Fall of 1953, almost everyone associated with the industry was predicting a large drop in sales. Between the last quarter of 1953 and the second quarter of 1954, TV-set prices were reduced about 18 percent. Sales of TV sets to consumers picked up briskly. Units sold in 1953 by dealers to the public were estimated to be 6,400,000; they rose almost 15 percent to 7,300,000 sets in 1954, at a time

circumstances. However, the years of TV's youth were disturbed, making the task much more complicated and any conclusions reached less reliable. It is particularly difficult to isolate the influence of price on the sales of a *new* product, for strong independent forces are at work on both price and sales.

The balance of this section is devoted to a very brief discussion of the main difficulties confronted in measuring the

price elasticity of demand, as illustrated by the case of TV sets in particular. Most of these difficulties arise in measuring the elasticity of demand for any branded consumers' good; they probably are especially great in the case of new products.

Even the very terms involved in an elasticity problem pose difficult questions of definition. Take the simple terms "sales" and "demand": Economists ordinarily discuss demand in terms of number of units sold—or that would be sold—at specified prices. Actually, unit sales of TV are composed of very different kinds of sets; both from the general economic standpoint (involving problems of volume of employment, total factor payments, investment requirements, etc.) and from the standpoint of the businessman (in making decisions affecting price, sales promotion activity, investment, etc.) the composition of total unit sales is of crucial importance. Accordingly, one must either modify his conception of demand so it becomes total money spent, or he must estimate sales of each main type of set separately. The first alternative is not very helpful, for a high level of dollar sales concentrated among low-end items could be far less profitable for a producer than a much smaller sales volume concentrated on high-margin items. We can afford to pass by this question, but anyone who wants to measure elasticity for concrete application must find some solution.

Even the term "price" is difficult to define for a product such as TV (and TV certainly is not unique in this respect). Apart from the well-recognized difficulty of taking account of quality changes over time, great problems arise from the existence of many brands and

many models of each brand. Unfortunately, the prices of brands and of individual models within any brand do not vary at the same time or with the same amplitude. On the contrary, price-setters in the television industry apparently vary prices of individual models in ways they believe will lead consumers to think that prices are lower or have been reduced more than actually is the case. For example, they may reduce prices of two or three models in a line including fifteen models, which reductions they will advertise widely to convey the impression that the prices of all models have been lowered. The price changes on individual models made by all manufacturers do not conform to a regular pattern; consequently, significant variations in intraline prices might be hidden behind a stable average.

In the face of this type of price behavior, what price should one use in measuring price elasticity of demand? Presumably, he would choose from among the following: average price (unweighted) of all models offered; weighted¹ average of all model prices; average price of models offered by manufacturers who advertise widely; the lowest price at which one can buy a set with the smallest generally acceptable screen size (say seventeen inches at present) of a nationally advertised

¹ The problem of "weighting" in compiling a price to be used in computing the price elasticity of demand probably has received less attention than it merits. Use of price indexes that are weighted (whether or not the weights are changed) by actual purchases includes in the measure of price some of the influence of price upon consumers' responses to sellers' price demands. The object of an elasticity measurement is to segregate and measure the entire response of buyers to changes in the price demands made by sellers.

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brand; and the minimum price of any size of screen and of any brand.

Several generalizations will be advanced about the particular price that exerts the greatest effect on sales on television sets; these may have fairly broad applicability.

1. Probably the most critical price from the standpoint of its effect on unit sales is that asked for the lowest-priced nationally advertised brand of widely purchased screen size that has won general acceptance.² The average of all prices asked, including very large as well as small screens, the prices of consoles as well as table models, and combinations as well as straight TV sets, almost certainly is not the significant price to consider in accounting for total unit sales. It appears that prices above this crucial minimum price influence the composition more than the number of units sold. This conclusion has not been established for TV for, as explained, elasticity measurements by mathematical means are either meaningless or doomed to be wrong if computed mechanically under the conditions that have prevailed. In an investigation of the demand for automobiles, however, a closely related concept of price was found to give the best explanation for variations in sales.³

2. Total sales in units and dollars are affected by the product mix that pro-

ducers make available. (At one time, many major TV manufacturers made only a small number of their promotional models.) While some shifting of consumers to higher-priced models is possible, there are limits to what can be done in this direction. Consequently, some adjustment would be required for prices that are nominal, where such prices exist.

3. Owing to the large proportion of TV sales that are "on time," one useful way of defining price is by the monthly or weekly payment required on the average set, which is affected by the prevailing rate of interest and the amount of time in which payment must be completed.

4. The existence of a whole gamut of price choices probably weakens the effect of any single or average price change upon unit sales. If hard pressed for cash, the consumer can buy a second-hand set. (If he is willing to accept a small screen, his price will be little more than for a new toaster.) He could purchase a new set that is known locally but not advertised nationally and is in a distressed condition. (Since 1953, there has always been some of this merchandise around.) Or, he can purchase a nationally advertised and widely accepted brand. Changes in price could have their primary effect upon the brand composition of consumer purchases rather than upon when and how many they buy. That is, a general drop in price may lead consumers to buy one of the "best" brands; if prices increased, most consumers might not give up their determination to buy, but might simply take a less well-known brand at a lower price. Or, consumers might react to a general price rise by shifting to cheaper models of the same brand.

² This conclusion and the four that follow are not advanced as proved propositions; unfortunately, they are not amenable to empirical verification. They are noteworthy and have a substantive importance in that they seem to represent the preponderance of opinion among persons in the "sales end" of the TV business.

³ C. F. Roos and V. von Szeliski, *The Dynamics of Automobile Demand* (New York: General Motors Corporation, 1939).

Many, if not most, consumer purchases are made in at least two main stages: the first is the decision to "look around" or in other ways to investigate the alternatives available; the second is to purchase a particular item at a specified price from one special vendor. The first stage often reflects an irrational—certainly it often is inexplicable—impulse. (The degree of irrationality varies widely from product to product; if the product is one that is purchased very infrequently and does not satisfy a stable and recurrent need, impulse is likely to figure very heavily in the decision to "look around.") The existence of a wide variety of price choices, some of which are very low, makes it highly probable that the initial impulse will eventuate in a purchase.

5. The effect of a cut in list price upon unit sales probably is much smaller than an equal discount offered without a change of list price, if the availability of discounts is known. Discounts contain an element of impermanence; certainly, retailers offering discounts try to create the impression that they are something special and may be withdrawn before long. Changes in list price, on the other hand, are something the consumer can "count on." Indeed, they imply to many that further reductions may be in the offing; they tend to counsel patience whereas discounts tend to hurry purchases.

Discounts from list price tend to increase the volume of sales as well as speed their timing. Since consumers are unable to estimate the substantive merits of alternative brands or of all brands in general, they tend to settle on some measure of "true value." One of the most widely used measures is "list price." Accordingly, discounts below list

represent bargains, whereas reductions in list do not; the opportunity to buy a "bargain" is likely to induce purchases that would not be made in its absence. More and more retail selling is taking the form of "selling against list price" and has created a new source of consumer error. It has become settled policy in some industries to advertise an artificially high retail list price so that large discounts can be offered by all retailers without reducing the traditional margin obtained by the retailers.

Apart from the foregoing difficulties in selecting the price to be used in measuring price elasticity of demand for a branded consumers' good, interrelations among various sources of television demand must be unraveled if the effect of price on TV-set sales are to be assessed properly. In particular, the possible connection between new and second-hand-set sales must be understood. It may turn out that price reductions which increase the sales of new sets have the following total effects: First, they induce consumers to purchase now what they would have bought sometime within the near future. Second, they may result in the trade-in of better quality sets, which are resold to persons who might, in the absence of such high-quality sets, otherwise have purchased new sets. And, third, the sets traded in might be used as a source of parts, reducing the demand for new replacement parts which are, for the most part, generally obtained from the manufacturers of new sets. Put differently, the foregoing cases illustrate how the speeding up of purchase by a price reduction (or almost any other factor) may have indirect effects that could lower the producer's

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sales of the same or other things at other times.

For whatever it may be worth, I am willing to record my guess about the elasticity of demand for TV sets at the present time. A decline in the prices of all models of all brands by any given percentage probably would result in a smaller percentage rise in unit sales. Similarly, an equal percentage reduction in the prices of the lowest-priced models with a screen size in popular demand by all firms doing extensive national advertising would, in my opinion, result in a smaller increase in unit sales, and a drop in total retail expenditures for TV sets. These two types of price reduction

THE INFLUENCE OF PERSONAL INCOME AND ITS VARIATIONS ON TV-SETS SALES

Early TV ownership apparently was far less affected by personal income than might have been anticipated. Table 2 presents the best available continuous series describing TV ownership by income groups since September, 1949.

Income obviously influenced TV purchase by excluding persons from the market who neither possessed nor could borrow the necessary funds. Especially in the early postwar period, those persons were unusually few in number for it was one of the most prosperous

TABLE 2. TV Ownership by Income Classes, 1949-1955
(Percentage of Families in Group Owning Set)

Date	Upper Fourth	Next Fourth	Next Fourth	Lowest Fourth
September, 1949	7	7	6	3
October, 1950	24	19	18	12
January, 1951	32	26	24	16
July, 1951	33	32	28	18
January, 1952	38	35	33	18
July, 1952	45	41	40	23
January, 1953	55	50	45	29
July, 1953	58	55	50	32
January, 1954	66	65	56	37
July, 1954	70	63	59	41
January, 1955	76	70	66	46
April, 1955	77	72	69	48

SOURCE: Compiled by Market Research Corporation of America, based upon a carefully designed representative sample of families, drawn from over 4000 sampling neighborhoods, dispersed among 134 standard metropolitan areas and 775 additional counties. Originally included 4300 families and later expanded to 5800.

are almost certain never to arise, which, while it gives comfort to one making such predictions, also robs them of any practical value.

As already suggested, the effect of price on sales apparently was far smaller when TV was in its youth. At that time, the demand for TV sets was extremely price-inelastic.

periods in the nation's recent history; moreover, liquid asset holdings, especially when measured in real rather than money terms, were unprecedented because of a long period of suppressed inflation.

Variations in set ownership from community to community, likewise, are explainable only to a slight extent by

TABLE 3. TV Saturation Level Compared with per capita Income for One-Channel Communities as of May, 1953 (Pre-freeze Channels Only)

Community	Date of Beginning Operations	TV Saturation as of May, 1953 ^a	1952 Effective Buying Income per capita
		(1)	(2)
St. Louis	1/8/47	74%	\$1802
Schenectady	12/1/47	81	1771
Milwaukee	12/3/47	94	1848
Richmond	4/15/48	72	1734
Buffalo	5/14/48	90	1773
New Haven	6/15/48	92	1938
Toledo	7/21/48	93	1977
Fort Worth	9/29/48	60	1754
Seattle	11/25/48	60	1910
Albuquerque	11/29/48	33	1639
Memphis	12/11/48	65	1351
New Orleans	12/18/48	57	1520
Houston	1/1/49	59	1888
Pittsburgh	1/11/49	88	1671
Erie	3/15/49	97	1663
Miami	3/21/49	57	1581
San Diego	5/15/49	64	1655
Indianapolis	5/30/49	80	1933
Lancaster	5/31/49	76	1649
Oklahoma City	6/6/49	69	1632
Rochester	6/11/49	86	1882
Wilmington	6/30/49	79	1737
Providence	7/10/49	88	1548
Charlotte	7/15/49	75	1547
Grand Rapids	8/15/49	66	1551
Johnstown	9/15/49	82	1308
Greensboro	9/22/49	50	1417
Kansas City	10/16/49	64	1860
Jacksonville	10/16/49	65	1438
Tulsa	10/22/49	64	1725
Bloomington	11/11/49	71 ^b	1100
Huntington	11/15/49	76	1296
Utica	12/1/49	85	1596
Binghamton	12/1/49	67	1792
Phoenix	12/4/49	52	1484
Ames-Des Moines	2/21/50	67	1731
Norfolk	4/2/50	79	1456
Lansing	5/1/50	70	1719
Kalamazoo	6/1/50	78	1597
Nashville	9/30/50	66	1461

SOURCE: NBC File on Television and Radio Ownership; and Sales Management, May 10, 1953.

^a Based on Standard Metropolitan Areas.

^b County area only used.

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personal income differences. Table 3 presents the level of indicated saturation per capita and effective buying income in all communities which, in 1953, had only one local channel and whose channels started to operate before the ban on transmitter construction was lifted. Although it has been impossible to eliminate altogether differences in number of channels, because sometimes programs can be received from fairly distant communities because of topographical peculiarities, and the basic data on number of homes that can receive acceptable signals and the number of sets actually sold in each area are not precise, these data strongly suggest that intercommunity differences in set purchases are affected far more by other circumstances than level of personal income. (The coefficient of rank correlation between TV saturation [May, 1953] and effective buying income per capita [1952] for all the communities listed in Table 3 was 0.257.)

This evidence, which suggests relatively slight effect of personal income on TV ownership, is inconsistent with the prewar situation. During the earliest years of commercial TV sales (1939-1941) only the most prosperous made purchases, if one can rely on personal observation and the impressions of people in the industry. In the case of color TV also, the earliest purchases were made by the prosperous, those who had some commercial inducement, and a few isolated consumer pioneers.

It is remarkable, all things considered, that so many persons of modest income made TV purchases during the early postwar years. Apparently, certain motives moved these persons to purchase far more than the prosperous, and

helped to offset the effect of income. Two such factors suggest themselves: the professional entertainment offered by TV represented something wholly new and otherwise inaccessible to low-income recipients, but possessed no great novelty value to the prosperous. Second, TV may actually have represented an instrument for reducing entertainment expense, or was believed to have that effect.

The postwar economy offers only limited opportunities to observe the effects of general changes in per capita income (essentially of cyclical fluctuations) upon the output and sales of TV. Only two minor recessions occurred since TV reappeared on the market following World War II; the second of these took place when TV already had (for most of the nation, anyhow) reached its adolescence. The 1949 recession, however, did occur during the industry's infancy.

Unfortunately for statistical analysis, that recession started late in 1948 and was over well before 1949 ended. Even more confusing, no seasonal pattern had emerged by that time for TV-set production (see Chart C). Accordingly, it is impossible to isolate, even crudely, the impact of the recession of 1949 on TV production.

Production of TV sets declined during the recession that started in the Fall of 1953 and ended by Autumn of 1954; this decline could be attributed to the depressive effects of the general business decline (see Chart D). However, the drop in production at the end of 1953 and in the first half of 1954 can be traced more directly to the very heavy inventories held at all stages of the industry, and the general pessimism of forecasters associated with the in-

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dustry. Retail sales actually outran production during much of that period (see Chart E).

Because of the inconclusive evidence available on this point, one must decline to reach any conclusion about the effect of changes in general business

seasonal in origin, and could easily be ascribed to still other causes.

Thus, during the TV industry's infancy, sales depended primarily upon circumstances other than price and income, though these factors were not wholly without effect. Unfortunately,

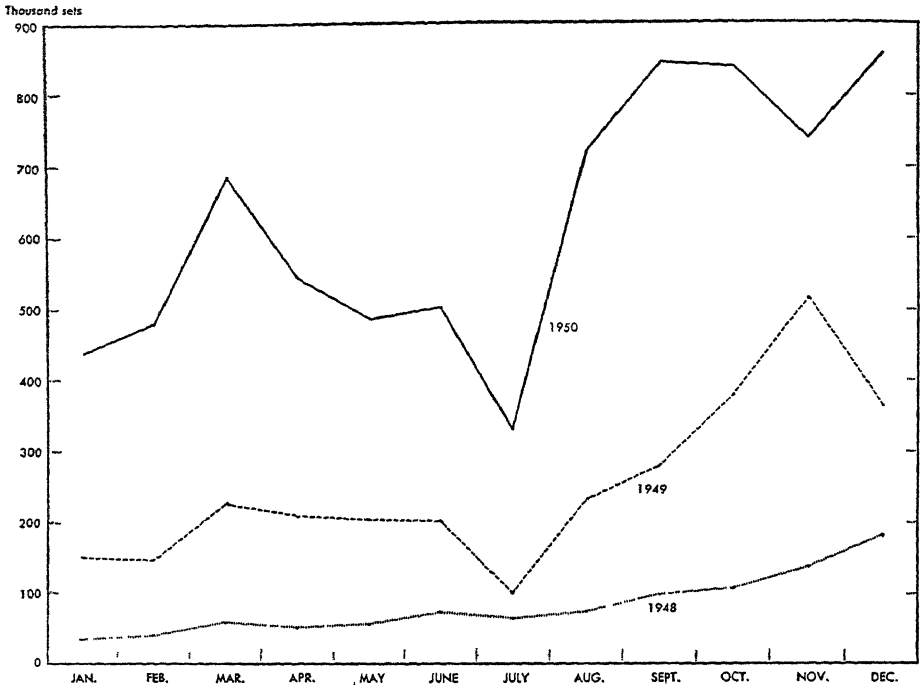


CHART C. Total Television Production, Monthly, 1948, 1949, and 1950.

conditions upon the output of TV in its infancy and youth. In both recessions, one finds several months in which production declines might have resulted from the general business recession; in particular, the reduced output in April, May, and June of 1949 and the decline after September, 1953. On the other hand, these reductions in output were not very pronounced, might well be

available techniques do not allow one to isolate and measure the influence of either or both factors during the period reviewed. To find the main influences on TV-set sales during the early years of this product's existence, one must look to other factors than those that usually can account for the sales of an established product.

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MAIN FACTORS INFLUENCING UNIT SALES OF TV DURING INDUSTRY'S YOUTH

One is forced to conclude that the sale of TV during the years 1946 to, say, 1952 was influenced strongly by something here called "buyer impati-

its widespread use might be delayed a very long time. (It is even conceivable that extremely patient consumers might never buy a product because further delay might be rewarded by further improvements in quality and reduction in price.)

Another vital influence upon the

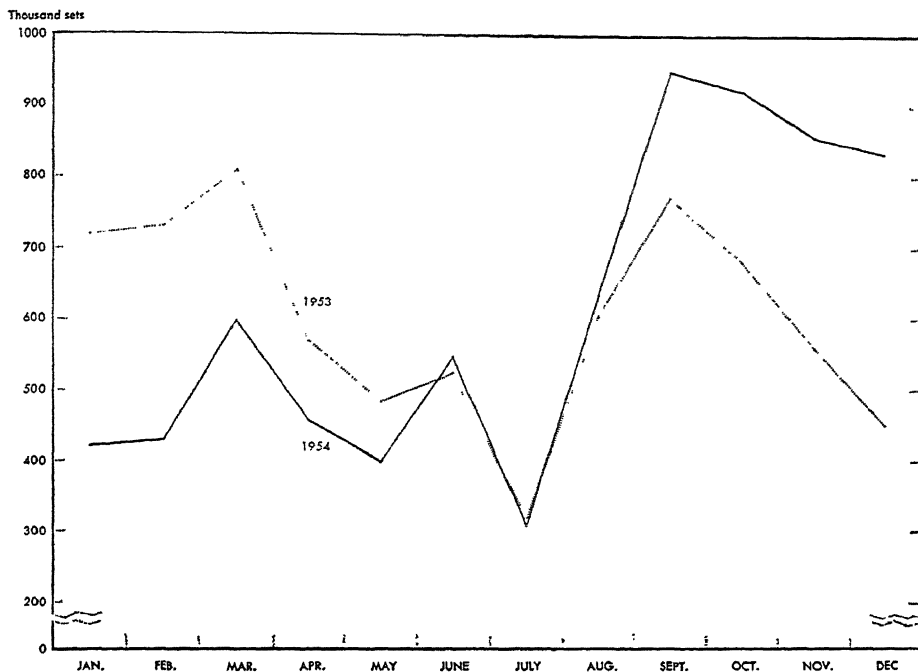


CHART D. Total Television Production, Monthly, 1953 and 1954.

ence." Buyer impatience consists of a determination to have a product even though the financial rewards for waiting are likely to be very great. Impatience to own must be an extremely potent influence upon the sale of most new products because, almost always, consumers could benefit from substantially reduced prices and improved quality by delaying purchase. If they place little value upon immediate ownership of a new product,

sales of a new product, that has very little effect upon the sale of established products, is the extent to which consumers know of it. With the widening awareness of the new product's existence and verification of its substantive value by word of mouth,⁴ sales rise *ceteris paribus*.

⁴ The importance of word-of-mouth information varies, one would suppose, upon the amount one must invest to find out for

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One might regard the demand for an innovation as coming from four main types of buyers: First, persons who would gain very great substantive benefit from owning the product because of some peculiar factor of their situations; second, persons especially desirous of

chased it; fourth, persons who are impatient for a whole host of subjective reasons that a psychologist can explain better than this economist. Among the factors that might explain such impatience are boredom, the zest for novelty, the craving for action, and what

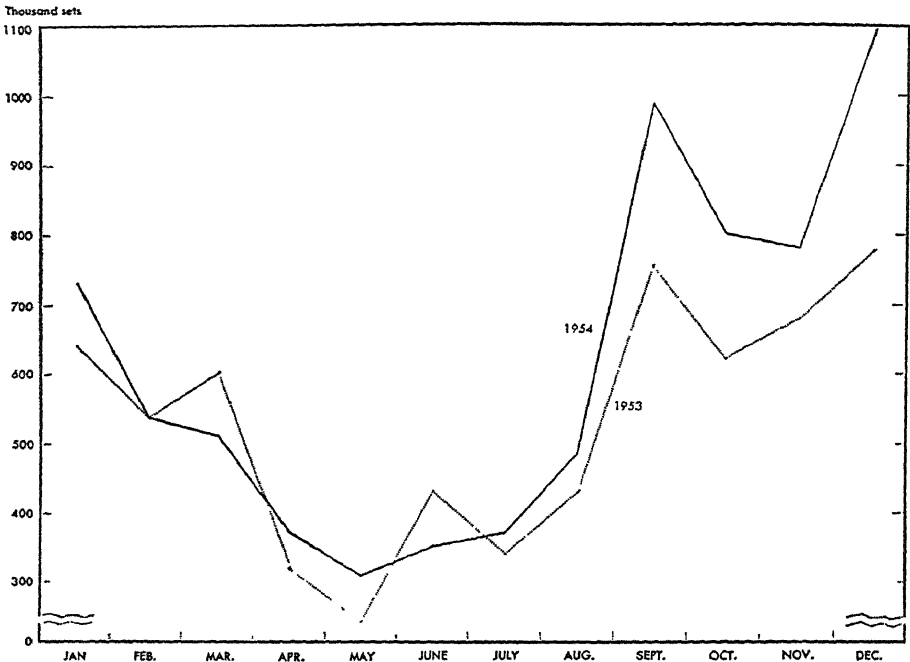


CHART E. Television-Set Retail Sales, Monthly, 1953 and 1954.

the status, prestige, and attention that comes from being pioneers in consumption; third, those who are pushed to purchase a new product lest they lose status to others who have already pur-

himself. If the item in question is a 25-cent gadget, one would expect large purchases as a gamble on the part of the consumer. On items such as TV, where the acquisition cost and the potential service cost were very high, some reassurance about what the product would do was very important for the more conservative consumers.

appears a semiconscious hope for a miracle that would make life suddenly more interesting or enjoyable.

The strength of these pressures to buy generally is so great as to transcend the influence of even substantial differences in price. It is upon such impatient persons that the speedy development of a new product may depend. These buyers speed commercial production and help to finance the research and development that must underlie the full realiza-

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tion of the inventor's basic idea.

It is impossible to know in advance just how impatient consumers will be to obtain a particular new product. In the case of television, this impatience was enormous following the war but of little account before the war. Interestingly, it has turned out to be far less with respect to color television than almost everyone anticipated.

Businessmen understandably are often puzzled as to whether they should offer a new product in commercial quantities and count on buyer willingness to buy it despite the substantial gains to be realized by waiting. Their decisions regarding innovations are probably far more crucial than those of consumers. It is they who determine which alternatives consumers shall be offered and at what time.

One thus finds very little help in explaining the sales of a new product in the years immediately following its introduction from formal economic doctrine and from statistical studies of demand for established products, both of which emphasize the importance of price and income. During the early years of a product's market existence, price reductions apparently have more of an inhibitory than an exhilarating effect on sales. The prospect that patience in purchasing would be rewarded by a sizable price reduction probably makes purchases lower than they would be in the reasonable expectation of price stability. And, in the case of TV and most other consumers' goods, price reductions that are made prove the benefits of patience and are invitations to wait a while longer. Thus, one may say that sales of a new product increase in spite of adverse price reductions during its early infancy.⁵

NET IMPACT OF TV UPON TOTAL ECONOMIC ACTIVITY

The foregoing discussion of TV demand determinants does not explain even the gross impact of TV's advent upon consumption expenditures and national income. Producers' outlays in connection with TV prior to its commercial sale increased personal income and in that way contributed to higher total consumption, and in turn to a higher per capita real income. On the other hand, not all the gross contribution of TV represents a net addition to business activity. It is even conceivable, though not likely, that TV actually reduced total consumption expenditure and national income.

There should be no difficulty in conceiving of a new product that would reduce total consumption expenditure (even after taking account of its effects on investment) and lower total factor payments. Such innovations are analogous to capital-saving producers' goods. If a consumers' good is a very close substitute for another for which the demand is inelastic and it involves substantially lower factor payments, it almost certainly would reduce total consumption outlays.⁶

⁵ An eloquent testimony to the relative insignificance of price and income upon TV-set sales during the industry's early youth is to be found in the techniques employed, up until recently, to forecast TV-set sales by persons closely associated with the industry. It is not an exaggeration to say that these factors were *consciously* omitted from consideration. Indeed, they were rarely mentioned along with the usual qualifiers in which forecasters generally take refuge.

⁶ One might find the closest parallels to this situation among major product improvements—which many persons consider innovations. Such changes greatly increase the functional value of a widely owned product and cause it to last longer, even though the

Actually, the main economic impact of TV comes from a unique source and may be very considerable. Television has demonstrated itself to be a very potent advertising medium⁷ with a frightening ability to persuade consumers to make purchases they would not have made otherwise. It is not clear whether TV has, by virtue of enhancing the effectiveness of advertising, raised the average propensity to consume; one finds it difficult to understand how it could be totally lacking in such an effect. Certainly, it has changed the brand composition and almost certainly the product composition of consumer purchases significantly.

There are several factors that determine the *net* impact of a new consumers' product upon total expenditure; these will be listed briefly, and a few words said about their relevance to TV in particular. It can hardly be over-emphasized that the following discus-

sion makes no pretense at being exhaustive either of the factors considered or of their applicability to TV in particular. In a full treatment of this subject, one would want to differentiate carefully between the short-run and long-run economic impact of a new consumers' product, but that distinction is not carried through here.

product may cost less. The "new product" would be a perfect substitute for the old and would, presumably, displace it. (One would want to select a product whose demand was inelastic to begin with.) Although the initial introduction of the improved product would probably lead to general replacement and increased total expenditure, the ultimate effect would be to reduce consumer outlays for the product. As the writer describes this example, he has in mind the development of an improved brush for use in the washing of dishes.

⁷ W. R. Simmons and Associates Research Inc., on behalf of The National Broadcasting Company, conducted a survey of Fort Wayne, Indiana, six months before and six months after the community received its first channel. The study, which was based upon a large and apparently well-designed sample, showed a dramatic change in the brand preferences of TV owners, whereas others did not. See, "How Television Changes Strangers Into Customers."

Some new products can be turned out by using surplus facilities already in existence; others are made essentially by hand and require little in the way of productive facilities. At the other extreme are products that need for their production, wholly new, different, and highly costly equipment.⁸ Thus, there is no uniform relationship between the dollar output of a new product and the dollar investment required to make its production possible.

THE AMOUNT OF INDUCED INVESTMENT

⁸ Transmitters vary in size and cost. About one, we read the following: "A typical medium-size station, KNUZ-TV in Houston, was originally expected to cost around \$275,000, although the final total will probably exceed \$500,000. This station originated UHF telecasts from a main studio 40 by 80 feet in size and convertible into two smaller studios, and also from glass-enclosed news and announcers' spaces and a kitchen demonstration studio used for cooking school programs. The electronic core of such a station includes units for video (the picture) and audio (the sound)." On July 1, 1955, there were approximately 410 channels in operation.

"The average TV station will apparently have a payroll of about 80 people, who may receive an annual total of about \$400,000 in wages and salaries. Large additional amounts are usually earmarked for part-time workers and special entertainers."

See Robert H. Ryan, "Texas—on the Air," *Texas Business Review*, XXVII, No. 10 (November–December, 1953).

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The difficulties of measuring the amount of investment induced by TV are unusually great, for this industry is badly "scrambled" together with the radio industry and the industry manufacturing electronic equipment.

In some cases, the facilities devoted to an innovation obviously represent a diversion of rather than additions to investment. For example, Zenith, which entered the TV industry relatively late, dropped its very large automobile radio business (up to then, it had been the largest producer in the country) to release facilities for the production of TV sets. Very few of the so-called producers of TV—who are still mainly assemblers of parts produced by others—created large new facilities in the early stages of TV.⁹ In part, the apparent relatively small investment by TV producers in new productive facilities can be traced to the industrial antecedents of the chief TV manufacturers. With the single exception of Muntz, which went bankrupt in 1954, all the large producers of TV were heavily engaged in other related lines of manufacture. The traditional "new firm to produce a new product" was virtually absent. TV was essentially added as a

new and related line by very large firms which already were large producers of consumers' durables. Consequently, opportunities for diversion of facilities and the use of idle capacity (or more intensive use of existing facilities) were relatively great. Paradoxically, their greatest expansion of facilities seems to have come at about the time when the industry approached its peak of sales.

In the early days of TV the creation of productive facilities probably was concentrated among suppliers of parts required for TV alone, such as the viewing tube. The magnitude and timing of investment in the production of specialized TV components has not been investigated. Such an investigation might turn up some information of interest; however, it would probably reveal the pattern already implied: that is, facilities are diverted to a maximum degree at the outset. (In this case, from military electronics and radio.) Then, as technology stabilizes and after production is on a commercial scale for some time, specialized facilities are created.

Let us now turn to the direct effects of TV's advent upon total consumer outlay.

THE NEARNESS OF SUBSTITUTES

The greater the novelty of a new product, the larger its potential net effect on total consumption. If the product is not new but merely offers a superior method of doing something that can already be accomplished by available products, most of its impact is likely to be dissipated by diverting expenditures from the products for which it is a substitute.

To what degree is TV "new" and

⁹ Possible explanations for this apparent paradox includes: First, some of the recent investment was made to produce supplies that formerly had been purchased. In the early stages of an innovation's development "manufacturers" try to minimize their risks by buying in preference to "making," even if they must pay a premium for the privilege; later they become extremely cost-conscious and less concerned about "security"; Second, after a while, when technology seems to stabilize, producers find they can realize very substantial economies by extensive mechanization and by adapting plant design and layouts to the specialized requirements of the product.

"different?" It clearly is related to radio and to the motion picture and is a substitute for many other types of entertainment. Despite the *apparent* closeness of TV to radio and motion pictures, there are differences between them, which consumers could consider very significant. Just how similar these goods and services are in the view of consumers must be judged by their actual behavior. If they desire radios and motion picture attendance as well as TV sets, then one can say that they are significantly "different" in the consumers' view. On the other hand, if one were purchased in place of the others, then it may be considered a close substitute for them. From consumer behavior, TV must be adjudged an essentially new and different product, separated by a considerable gap from its apparent substitutes in the view of most consumers. TV is owned in conjunction with radio. (Indeed, a survey revealed that the TV set is, in 80 percent of all homes owning sets, kept in a different room from the radio.¹⁰) Moreover, the program fare offered by

each medium is different.

Motion picture attendance apparently was hard hit by TV during the years 1947 to 1953. In 1954 when most lines of business were mildly depressed, the motion picture industry staged a minor come-back for reasons only partly related to TV¹¹ (see Table 4).

One must conclude, however unsystematic and shaky the evidence, that the sale of no other product was drastically reduced by the advent of TV. Whatever declines did occur, and motion picture attendance was affected most, were not nearly comparable to

¹⁰ Of the 101 million radio sets in use in 1954, 25 million were in living rooms, 22 millions in bedrooms, 16 million in kitchens, 4 million in dining rooms, 2 million in dens, studies, and libraries, 26 million in automobiles, and 6 million in miscellaneous locations. See *Broadcasting and Telecasting*, September 27, 1954.

¹¹ It is of possible interest that with TV's advent, radio programs began to deteriorate because of a shift to TV of its best programs and its richest sponsors. The motion pictures, on the other hand, were pressed into offering better feature films.

TABLE 4. Sales of TV Sets, Radios, and Motion Picture Attendance

Year	Factory TV-Set Sales (national)	Factory Radio-Set Sales ^a (units)	Personal Consumption Expenditures for Motion Picture Theater Admission (million dollars)
1946	6,476	13,411,000	\$1,692
1947	178,571	17,610,000	1,594
1948	969,800	13,160,000	1,506
1949	2,970,100	7,176,000	1,468
1950	7,355,100	9,902,700	1,394
1951	5,311,888	7,913,985	1,338
1952	6,193,644	7,778,203	1,284
1953	6,870,068	7,748,929	1,227
1954	7,404,578	6,422,211	1,275

SOURCE: Radio and TV: Radio-Electronics-Television Manufacturers Association.

Motion picture: Department of Commerce, Office of Business Economics, *Survey of Current Business*, National Income Supplement.

^a Excluding auto radios.

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the direct gain in consumer outlay from purchases of TV sets.

SPEED WITH WHICH THE INNOVATION WINS ACCEPTANCE

For reasons that often are mysterious, some innovations take hold slowly, while others, no more valuable, do so immediately.¹² There are, however, influences sometimes overlooked that determine the speed with which a new product wins popular favor that are not mysterious. Attention must be directed to one in particular: the activities of actual or potential producers.

An enthusiastic producer who "believes in a new product" can do much to win rapid acceptance for it. He will

¹² A. C. Nielsen, Jr., discussed this general problem in an address to the Fourth Annual Conference on Consumer Behavior on September 15, 1955 (see Section 1). Among other things, he said the following: "... it appears to be virtually impossible to predict in advance just how long it will take to achieve a satisfactory level of sales. The record shows that even the most seasoned marketing executives are missing their guesses by months and even years on these questions." "... only one . . . [of the many technically sound products developed by DuPont] in 20 ever becomes a success in the market place!" . . . "Of products launched, however, by industry in general, 2 out of 3 fail according to Marion Harper, Jr., President of McCann-Ericson."

Mr. Nielsen made an analysis of a sample of new products and substantial product improvements to determine how much time was required to judge whether the innovation was a success or failure. The time was measured in the number of months *following* the full-scale launching of the product. He found that 10 per cent required between 37 and 48 months; 30 per cent required between 25 and 36 months; 20 per cent required 19 and 24 months; 20 per cent took between 13 and 18 months; another 20 per cent needed 6 to 12 months; and 10 per cent could judge success or failure in under 6 months.

press for heavy research outlays and for sales promotion expenditures that less enthusiastic producers would never consider.

Also, if the new product can be made by using underutilized personnel and idle productive facilities it has a big advantage over others. These products involve far smaller risks to their sponsors.

TV won very speedy acceptance from producers for a variety of reasons. As indicated, it could be produced with available facilities; much of the government-financed electronics research was applicable to TV, and the five-year period during which TV was not produced but was in use (that is, about 15,000 sets were in operation during the War that had been sold before TV set production was banned) helped to create strong producer conviction that TV had already arrived on a commercial basis. However, such large and seasoned producers of consumers' durables and radios in particular as Zenith and Admiral did not enter the industry until 1948. One might also note in this connection that RCA's position as holder of key patents to TV technology possibly gave it a strong incentive to quicken the development of the market for TV sets.

Television won consumer acceptance with remarkable speed; that is to say, buyer impatience to purchase this product was intense. Although there are some striking differences in the rate at which individual communities are approaching complete saturation,¹³ the rate of TV purchase is rapid compared to any other major consumers' goods of record in all communities.

¹³ A detailed analysis of available evidence was made on this point and omitted because it was bulky and inconclusive.

ACCIDENTS OF TIMING

Some innovations come on the scene at a time when their potential contribution is stringently limited; others make their debut when circumstances are spectacularly propitious. An innovation can influence the composition of output perhaps, but not do much to add to its total in an economy already operating near full capacity. Contrariwise, an innovation during a depression might induce heavy investment by producers and dissavings by consumers and thereby stimulate a large increase in total output. Conceivably, it might even start a general surge of the economy to new high levels of output.

Although economic activity in this country was somewhat depressed in 1938-1940, when TV first became available commercially, the new industry made no significant contribution to revival. Only an estimated 15,000 sets were produced before 1946 and very little investment was made in productive facilities to produce TV sets prior to World War II.

The outbreak of the War led to government restrictions on the use of scarce materials for the production of home-type TV receivers. Also, the War created a lucrative use for the facilities that might have been converted otherwise to the manufacture of TV sets.

TV received its second introduction to the nation following the end of World War II. Even though there had been a very long interval between the first production of TV on a commercial basis and the end of the War, only 6000 sets were produced all through 1946. But the industry faced many technical problems at the end of the war; also, the government was slower to cancel its contracts for electronic equip-

ment than any other type of military equipment. The industry quickly licked its reconversion problems and, in 1947, output was about thirty times as great as in the preceding year; by 1948, output reached over one hundred fifty times the 1946 level. In 1949 (a year of general recession) TV production was more than three times as great as in the preceding year. Growth did not stop in 1950, for production in that year was more than double that of 1949. In 1950, four brief years after the second introduction of TV, output (in units and value) reached peaks that have not been exceeded by much in any year since.

Just how much of this growth in output was due to the high level of liquid assets in the hands of consumers, the general postwar exuberance of consumers, which led to an unusually strong appetite for all kinds of goods, the shortage of other consumers' durables, one cannot say. However, TV represented a new demand upon the productive resources of an economy already burdened by excessive demands, at least up to 1949. It was in that year that the television industry had its first opportunity to arrest a downswing. The brevity and mildness of the 1949 recession, however, has not been ascribed to the growth of the TV industry during the period. (Unit sales increased by over 200 percent between 1948 and 1949 and the dollar sales by over 150 percent.) No business analysts attributed much weight to the TV industry as a factor in ending the recession, which still is regarded by most analysts as "inventory readjustment." After all, total factory value of TV-set sales in 1949 was little over half a billion dollars.

The foregoing is not full evaluation

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of the TV industry's economic contribution. It is offered only as a brief recapitulation of the circumstances prevailing when TV made its first and second appearance on the American economic scene, and to suggest lines along which TV's net contribution to the level of economic activity might be appraised.

ECONOMIC MAGNITUDE OF THE INNOVATION

Some innovations, like home permanents, electric typewriters, foam rubber pillows, electric razors, "stretchee" socks, etc., had only small potential income and employment effects, however great their contribution to welfare.

receivers involve heavy outlays. Consequently, from the start, it was clear that the sums spent in connection with television ultimately would amount to many billions of dollars (expenditures for TV sets at retail are shown in Table 5).

Apart from the heavy impact that was to be anticipated while consumers acquired their first receivers, television appeared to be similar to automobiles in several important respects. One could reasonably anticipate heavy sales for the replacement of worn-out equipment, large purchases due to the desire of consumers to possess new features, and to "be in style." In addition, multiple set ownership was clearly destined to reach large proportions. Thus, TV falls

TABLE 5. Television Purchases Compared to Personal Consumption Expenditures

	Retail Value of TV Production (millions of dollars)	Personal Consumption Expenditures (millions of dollars)	Retail Value of TV Production as a Percentage of Personal Consumption Expenditures
1946	\$ 2	\$146,617	—
1947	84	164,973	.05
1948	384	177,609	.22
1949	970	180,598	.54
1950	2,235	194,026	1.15
1951	1,659	208,342	.80
1952	1,719	218,424	.78
1953	1,995	230,080	.87

SOURCE: *Electrical Merchandising*, January, 1955; and Department of Commerce.

On the other hand, there have been other innovations, notably the railroad, electric power, and automobiles that had a readily perceptible and significant impact.

From the start, television was perceived to be potentially a major innovation. It embodies a fundamental development in technology and represents an essentially new product that will ultimately find its way into virtually every household. In addition, transmitters and

in the group of consumer product innovations that ordinarily would have moderate to major effects upon total consumption and economic development.

THE LEVEL OF ECONOMIC DEVELOPMENT

TV-set sales quickly attained great heights following World War II. This industry roared to economic maturity

in an unparalleled fashion; probably no other costly consumers' good found its way so quickly into the average consumers' budget.

Was the speedy growth of TV production directly related to the nation's relatively high level of economic development? What is the connection, if there be any, between the level of economic development and the contribution of any innovation to the economy?

With progressive economic development, new products seem to win acceptance more quickly. If this is the case, consumer ownership of new products reaches its own particular level of saturation much more quickly in a highly developed economy than in those that are poor.

At least four circumstances would contribute to this relationship, if indeed it does exist: (1) techniques for the stimulation of sales have been vastly improved and intensify consumers' desires to own new products; (2) highly developed economies apparently are afflicted more by competitive (ostentatious) consumption than are undeveloped economies; (3) the volume of liquid assets on which consumers can draw to finance the purchase of new consumers' goods is greatest in developed economies; (4) highly developed economies have created consumer credit facilities that permit purchases in the absence of accumulated assets.

For these or other reasons, purchases of new consumers' goods may tend to be bunched heavily in a new industry's early years when an economy has become highly developed. As a result, the impact of a new product's introduction upon total consumption expenditure may become increasingly concentrated and may therefore accentuate the initial

rise in consumer expenditures resulting from an innovation.

SUMMARY AND CONCLUSIONS

The demand determinants apparently, differ markedly for established and new products. In the case of TV sets, price and income variations played a minor role in the product's early sales. Two factors seems to govern the sales of a new consumers' good whose cost is considerable: buyer impatience and consumer awareness. Some products have a strong consumer appeal and many people are willing to pay a large money premium to have them soon rather than later. TV sets were an extreme example of such a product, for it was clear almost from the first that quality would improve quickly and price would decline sharply. In addition, large-scale purchases of TV, and other new products involving a sizable expenditure, apparently must await general knowledge of the product's existence and some reassurance from early consumers that the new product does substantially what is claimed for it.

To judge from the case of TV alone, there may be a fairly orderly time sequence in which consumers (classified by their relative impatience) buy a new product. Some were so situated that they gained a vast amount of substantive benefit from ownership of TV; others were motivated primarily by a desire to gain social status and attract attention by being an early owner of "the latest thing"; still others felt compelled to emulate the first members of their social group to own TV; and a fourth group apparently was impelled by what might be described as a form of escapism. This sequence, of course, would find the same

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individuals in different groups in the case of other costly consumers' goods.

The factors influencing TV's *net* impact upon national income are not difficult to enumerate, but their relative potency is unclear. TV may actually have raised the average propensity to consume, though no effort was made here to gather and process all the evidence available bearing on that question. TV almost certainly did influence the product, and did emphatically affect the brand composition, of consumer purchases. TV's impact on net national income was dampened by the fact that sets were produced initially to a large extent in already existing plants using existing facilities, rather than with completely new equipment; and by the fact that it made its appearance during a period when full employment was virtually assured by other circumstances.

One wonders whether TV would have been taken up quickly in the absence of the general spirit of exuberance that characterized consumer behavior during the early postwar years. It is possible that consumers would have been patient about owning TV and might even have waited for color TV, starting, say, in 1949, if there had been considerable unemployment, or even a real danger of a major depression.

Certainly, producers of TV really "pushed" the product hard by various sales promotion devices and found consumers very responsive. Inasmuch as TV is essentially different from though related to other products, it probably did not reduce markedly consumer expenditures for apparent substitutes such as radio sets and motion picture attendance.

COMMENTS ON "A DYNAMIC ELEMENT IN CONSUMPTION"

Eva Mueller

My first comment on Mr. Oxenfeldt's paper has to do with the comparative effect of raising discounts and lowering prices on consumer purchases. Mr. Oxenfeldt expressed the opinion that an increase in discounts will stimulate sales more than an equivalent reduction in list prices; Mr. Stigler has challenged this statement. Some Survey Research Center findings on consumer attitudes toward prices seem to lend support to Mr. Oxenfeldt's side of the argument. We have found repeatedly that the opinion that prices are stable and expectations that they will remain stable are more conducive to spending than any other perceptions of price trends, excepting only expectations of large price increases. It appears that expectations of small price increases create some uncertainty as to how much money will be left over for discretionary expenditures and as to when is the best time to buy. They therefore make for some postponement of buying that would not occur if prices were seen as being stable.

Second, Mr. Oxenfeldt emphasized that television is not typical of all in-

novations. I think this is particularly true with respect to his findings about the lack of relation between purchases and the purchaser's income level. The Survey Research Center has recently made a study of ownership of, and attitudes toward, new household appliances—deep freezes, air conditioners, dishwashers, clothes driers, and garbage disposal units. We found that the incidence of ownership of these appliances is closely related to income. Moreover, our data indicated that in each major income group interest in the new appliances and favorable attitudes toward them were more frequent among those whose income had increased in the past and who expected further improvement than among the rest of the people.

Third, I want to question Mr. Oxenfeldt's conclusion that as an economy develops it becomes less and less likely that new consumers' goods will raise the level of consumer spending. He arrives at this conclusion by the argument that new products will tend increasingly to be substitutes for old products, which they will replace in the con-

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sumer's budget. It is doubtful to what extent this argument applies to completely new products such as air conditioners, dishwashers, or clothes driers. But there are many other innovations in consumer's goods that may be characterized as improvements of existing products. I have in mind changes in the styling and the mechanical features of automobiles, larger TV screens, color TV, and the like. In a sense it is true that these improved products are substitutes for older products. However, since they have new features or improvements, they create dissatisfaction with the older products and lead to the replacement of goods which are by no means worn out. The advent of long-

playing records and high-fidelity record players is a familiar case in point. Our studies indicate that the desire for new features in household appliances makes for the replacement of middle-aged appliances which, in the opinion of their owners, are still in good operating condition. We found that persons who expressed interest in the new features more frequently had buying plans than other consumers; and there also was some indication from a small sample that they made more purchases in the subsequent year. I therefore believe that innovations are an important dynamic element in our economy and that they *do* stimulate consumer expenditures.

A THEORY OF THE CONSUMPTION FUNCTION¹

Milton Friedman

This monograph proposes an hypothesis, which I have termed the permanent income hypothesis, to explain the expenditures of consumer units on current consumption, and, accordingly, also their savings. The key feature of the hypothesis is its explicit distinction between the concepts of consumption and income implicit in the pure theory of consumption behavior and the measured magnitudes called by the same names. The hypothesis can be summarized in a system of three simple equations for the individual consumer unit:

$$\begin{array}{ll} (\alpha) & c_p = k(i, w, u) y_p \\ (\beta) & y = y_p + y_t \\ (\gamma) & c = c_p + c_t \end{array}$$

Equation (α) asserts that planned or permanent consumption (c_p) is a fraction (k) of planned or permanent income (y_p) that does not depend on the size of permanent income but does depend on other variables, in particular, the interest rate (i), the ratio of non-human wealth to income (w), and

other factors affecting the consumer unit's tastes for current consumption vs. accumulation of assets (u), such as the degree of uncertainty attached to the receipt of income, the consumer unit's age, and its composition. This is the simplest equation that seems consistent with the pure theory of consumer behavior.

Equations (β) and (γ) assert that measured income (y), and measured consumption (c) can each be regarded as the sum of two components: the permanent component that enters into (α), and a transitory component reflecting the influence of factors regarded as chance or random by the consumer unit, as well as errors of measurement. As they stand, these equations have no substantive content; they are purely definitional.

The permanent components of consumption and income can never be observed directly for an individual consumer unit; we can only observe *ex post* what it spends and what it receives. We

¹ Presented here is only the part of Milton Friedman's paper that summarizes his hypothesis. This paper was the final chapter of *A Theory of the Consumption Function*, then in press, and since published by the National Bureau of Economic Research (1957).

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can, however, make inferences about the permanent components for groups of families from observed data if we accept certain assumptions about the relation between permanent and transitory components. The particular assumptions I have made are that the transitory components of consumption and income can be taken to be uncorrelated with the corresponding permanent components and with each other; these are an essential part of the hypothesis presented in this monograph. In addition, I have on occasion assumed the mean transitory components of consumption and income to be zero. This is not essential to the hypothesis and has been done only for the convenience or simplicity of the particular application.

These assumptions breathe substantive content into equations (β) and (γ) . Equations (α) , (β) , and (γ) then imply an observed regression of measured consumption on measured income for which the ratio of consumption to income declines as measured income increases. They imply also a computed elasticity of measured consumption with respect to measured income that is proportional to P the fraction of the total variance of income for the group concerned that is contributed by the permanent component (P_v), and a height of the regression that depends on the mean level of the permanent and transitory components of income and consumption and on the variables affecting k . The regression is shifted upward by a rise in mean permanent income and by an increase in k . Thus changes in neither the elasticity nor the height of the observed regressions need imply any changes in consumer tastes and preferences for current consumption vs. accumulation of wealth, or in

opportunities for exchanging the one for the other. They may instead reflect simply changes in certain characteristics of the income distribution. The appearance of changing consumer behavior may simply be a disguised reflection of the fact of changing income structure.

For simplicity of exposition, the hypothesis has been described in its arithmetic form. A variant is to retain (α) but to replace (β) and (γ) by similar expressions in the logarithms of the various terms, and to assume zero correlations between the logarithmic transitory components of income and consumption and each of these and the corresponding logarithmic permanent component. This logarithmic variant seems to fit the empirical evidence better than the arithmetic variant and is the one that has been used in most of the empirical work of the preceding chapters. Its implications are essentially the same as those of the arithmetic variant, since the one can be regarded as a first order approximation to the other, and most verbal statements of the implications apply equally to both; its advantage is that the implications hold over a wider range.

The relation between aggregate consumption and aggregate income depends not only on the consumption function for individual consumer units but also on the distribution of consumer units by the variables affecting their behavior. Under simplifying assumptions, however, the aggregate function has the same form as the individual function and can likewise be described by (α) , (β) , and (γ) , with the exception that the variables determining the ratio of permanent consumption to permanent income (designated k^* for aggregate data) are different. They are now the distribution

of consumer units by i , w , and u , or such summary measures of these distributions as their means and variances. Given the same assumptions of zero correlation between transitory and permanent components and between transitory components of consumption and income, the hypothesis then has the same implications for the regression of

consumption on income computed from aggregate data as for the regression computed from data for individual consumer units. In neither case is stability of the observed regression a necessary consequence of stability in consumer behavior with respect to current consumption and current saving.

DISCUSSION OF MILTON FRIEDMAN'S "A THEORY OF THE CONSUMPTION FUNCTION"¹

James Tobin

Milton Friedman's book setting forth his "permanent income hypothesis" concerning the relation between household income and consumption is a major event. This is one of those rare contributions of which it can be said that research and thought in its field will not be the same henceforth. Other students of household behavior may not agree with the theoretical basis of Friedman's hypothesis or grant it the wholehearted affirmative verdict which Friedman believes justified by the empirical evidence. But their future work will be influenced by Friedman's approach and they will have to account for the kinds of phenomena to which Friedman calls attention.

Since the book was available only a week before the conference, my comments are based on a much more cursory study than the work deserves, and my remarks must be regarded as tentative questions rather than mature

criticisms. In particular, a thorough consideration of the consistency of the hypothesis with the statistical evidence presented by the author and with other evidence would be a major investigation. Consequently, my remarks concern mainly the logic and *a priori* plausibility of the hypothesis and the general method of testing it. I have little to say about the details of the supporting empirical evidence.

CONCEPT OF PERMANENT INCOME

The hypothesis begins with a division of the observed income of a household into two unobservable components, permanent income and transient income. Fundamental though this division is, Friedman is far from clear and consistent in defining it.

1. The concept is introduced in Chapter II with reference to an individ-

¹ These comments are based on a preliminary version of the book. In the published version (National Bureau of Economic Research, Princeton University Press: 1957) the author has made some changes, partly in response to these and other comments. But I have not altered my original discussion. References are to the published book.

ual with an indefinitely long horizon and advance knowledge of the entire stream of his future earnings. How the concept applies to a household containing more than one individual is not considered. Uncertainty about future earnings is discussed only briefly. The author concludes (p. 15) that uncertainty "establishes no presumption against" his form of consumption function. But he does not demonstrate that his concept of permanent income retains any meaning under conditions of uncertainty.

2. Even within the world of certainty or of certainty equivalents, the concept of permanent income has important ambiguities as soon as the individual's horizon is limited to his lifetime. If events develop according to the individual's expectation, is his permanent income constant throughout his lifetime? In particular, is the size of his permanent income independent of his saving behavior? When Friedman comes to analyze available data on the relation of savings to age and to claim them in support of his hypothesis (Chapter IV, Section 3), he starts with the presumption that permanent income is constant over the lifetime. He modifies this presumption (Footnote 51) only to allow for some imperfection in the capital market.

The definition of permanent income with which Friedman begins (p. 11) is the amount that the individual could consume and still maintain the value of his total wealth, including his human wealth, i.e., the capitalized value of his expected future earnings from labor. His permanent income would be the interest on his total wealth. If the individual increases or decreases his total wealth, his permanent income will

change. This conclusion seems inescapable, but it is ignored throughout the book.

An alternative definition of permanent income for a mortal individual is hinted in the example Friedman gives (pp. 7-11) for two-year horizon. On this definition, permanent income is the constant rate of consumption that would, over a lifetime, maintain intact only the initial nonhuman wealth of the individual. His initial human wealth would be exhausted at the end of his life. It is clear that, on this definition too, permanent income will depend on the rate of accumulation of nonhuman wealth. If the individual consumes less than his permanent income, thus defined, he is increasing his future permanent income.

3. Clarity in the concept of permanent income is essential to an understanding of the implications of estimated values of Friedman's k , the ratio of permanent consumption to permanent income. If the first of the two definitions just discussed is adopted, a k of 1.00 means that during a lifetime an individual will accumulate enough nonhuman wealth to replace entirely the initial value of his human wealth. A k of 0.90, for example, would imply an even greater amount of accumulation. On the second definition, a k of 1.00 would mean merely that the individual would, over a lifetime, neither accumulate or decumulate nonhuman wealth.

4. Most of the empirical argument in the book is dominated by a concept of permanent income with a much shorter time horizon than either of these two theoretical concepts. According to this concept, permanent income is something like a moving average of observed incomes over a period of two

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to five years. Permanent income is the expected value of income for the individual, taking into account his age as well as his occupation, ability, non-human wealth, etc. The transitory component is a deviation from this expectation, owing to circumstances that change at random from year to year, e.g., health, weather, fashion. On this definition, changes in observed income related systematically to age are regarded as changes in permanent income rather than as transient components.

This is a difference of considerable significance. According to the lifetime concept of permanent income, the consumption of both the very young and the very old should greatly exceed their observed incomes. According to the short-horizon concept, this need not be the case. The implications of the short-horizon concept are considerably less novel, and also considerably more widely accepted, than those of the lifetime concept. With the short-horizon concept, the Friedman hypothesis says that consumers will tend to maintain their consumption in the face of declines in observed incomes when these declines are regarded as temporary. No student of the consumption function would deny the existence of such a tendency, although Friedman may exaggerate its strength.

In discussing this problem, Friedman takes the view that "intuitive plausibility gives little guidance to the exact kind of average [lifetime income], or length of horizon. For this, we must rely on the empirical evidence." (p. 25.) As I hope to make clear below, the empirical evidence is already heavily burdened. It cannot be expected both to test Friedman's hypothesis and to determine how the hypothesis ought to be formulated.

RELATION OF PERMANENT CONSUMPTION TO PERMANENT INCOME

Like observed income, observed consumption is subject to a myriad of transient influences that vary randomly from one year to the next. Consumption, too, according to Friedman, can be divided into permanent and transitory components. The ratio of permanent consumption to permanent income is asserted to be independent of the level of permanent income. The ratio may, however, vary from individual to individual and from time to time for the same individual. According to Friedman, the ratio will depend on the rate of interest, the ratio of non-human to human wealth, and such demographic variables as age, size of family, and education.

Why is the consumption ratio independent of the level of income? This fundamental question receives surprisingly meager discussion. In Chapter II Friedman uses an illustrative example of a consumer with a two-year horizon. He *assumes* that the individual will consume all this wealth over the two periods, and he then addresses himself to the question how this consumption will be apportioned between the two years. The relative apportionment, he argues, will depend on the interest rate (the higher the interest rate, the greater will be first-year consumption relative to second-year consumption) but not on the absolute amount of wealth. Acceptance of this argument does, it is true, remove one possible source of a relationship between first-year consumption and total wealth or permanent income. But this is surely of minor importance compared to the question which Friedman

begs by his assumption that the terminal wealth of the individual is zero. Terminal wealth, the amount an individual leaves to his heirs, is surely related to the initial human and non-human wealth of the individual. Is it plausible to believe that this relationship is one of proportionality? Do both the millionaire and the unskilled worker pass on, say 10 percent of their initial wealth? The answer depends on aspects of human behavior, cultural values, and social institutions, that Friedman does not mention: attitudes concerning responsibility for the economic status of the next generation.

This is an important unsolved question of social science, on which we have all too little guidance either from theory or from empirical observation. It is not to be solved by a glib dimensional argument such as Friedman gives in the footnote on page 13: "... the ratio of consumption to permanent income is dimensionally free from any absolute units. . . . One would expect this ratio to depend on dimensionally similar variables . . . (like the rate of interest . . .). Why should it depend in any obvious way on such a dimensionally different variable as the absolute level of income . . . ?" Economics abounds with functional relationships between variables different in dimensionality: for example, the relation of average or marginal cost to rate of output. To choose an example more closely related to the issue in dispute, the proportion of time devoted to leisure rather than to work (a pure number) is historically related to the real wage (with dimension units of physical goods per hour).

The assertion that permanent consumption is proportional to permanent income must be distinguished from the

assertion that the relationship between the two variables goes through the origin. The first proposition implies the second, but the second does not imply the first. The second proposition has much more support in common sense and in empirical evidence than the first. Since the means available to consumers to finance dissaving are limited, consumption cannot long exceed income even if income is very low. It was foolish to think that the dissaving associated with depression incomes in the 1930's would also have occurred at the same levels of income in prosperity before the first World War. We are indebted to Paul Samuelson, Simon Kuznets, Dorothy Brady and Rose Friedman, James Duesenberry, and Franco Modigliani for their parts in combating this foolishness. But neither their evidence and their arguments nor those of the present book are sensitive enough to choose between the hypothesis that the long-run consumption ratio is invariant with income and the hypothesis that the consumption ratio, though never greater than one, declines with income.

RELATION OF TRANSITORY CONSUMPTION TO TRANSITORY INCOME

The assumption that the marginal propensity to consume out of transitory income is zero is undoubtedly the most implausible component of Friedman's hypothesis. It is especially implausible if permanent income is regarded as a lifetime constant and deviations from this constant due to age as transitory components. But even on the short-horizon interpretation of permanent in-

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come, Friedman finds it difficult to defend the assumption.

Against the observation that windfalls are likely to be spent in part on durable luxuries, Friedman argues that accumulation of durable goods should be counted as saving rather than consumption. As James Morgan has argued, this method of accounting may indeed make more sense in terms of household motivations than the conventional concepts of national income accounting. But even this definition of savings does not entirely rescue Friedman's assumption. Use of durable goods must be counted as consumption. Is it not likely that temporary good fortune will lead to a more intensive use of existing stocks of durables as well as to acquisition of new durable goods?

In any case, virtually all the budget study data introduced as evidence in support of the permanent income hypothesis use data employing the conventional definitions of consumption and saving.² What do checks against this evidence mean when there is such a wide discrepancy between the concepts appropriate to the hypothesis and those used in the data?

There are many reasons for doubting the assumption that the marginal propensity to consume from transitory income is zero. Two important ones are: (1) Dissaving to maintain consumption in the face of temporary declines in income requires wealth or borrowing capacity. Since some individuals are bound to lack these in sufficient quantity, there is necessarily a positive correlation between transitory consump-

tion and transitory income. (2) Temporary needs or desires for greater consumption are a motivation for a household to supply more labor, either by overtime or by the entry into the labor force of secondary earners. This source of positive correlation between income and consumption is surely more frequent than Friedman's example of a negative correlation where increased hours of work leave less time for consumption.

METHODOLOGY OF THE EMPIRICAL TESTS

Elsewhere in *Essays in Positive Economics*, Friedman placed his methodological views emphatically on record. The influences of two of these views on this book are not hard to find. In my opinion, one of the views has a very salutary influence and the other an unfortunate effect. The salutary view is that a theory should lead to implications that are capable of refutation by empirical evidence. Friedman is justly scornful of theories that are so general, so trivial, so tautological that they cannot conceivably be wrong. He has the courage to construct a theory which results in meaningful propositions and to suggest a list of tests, beyond the ones he has made in this book, on which his hypothesis might fail. This list is an admirable practice, and our science would advance faster if Friedman's example were more widely followed. At the same time, the question arises why Friedman himself did not perform some of these tests. For some, it is true, the necessary data were not available to him; but this was not the case for all.

The less salutary methodological view is that a theory should be tested

² Friedman's time series data do conform to his preferred definition of saving, but his time series tests are not as crucial as his budget study tests. See below, pp. 452-53.

only by its ultimate implications, that the postulates and intermediate deductions of a theory need not, and indeed should not, be subjected to informal or formal empirical test. Friedman's ultimate answer to possible doubts about his assumptions is always that they will be implicitly tested along with the propositions deduced from them. If these propositions give useful predictions, then all worries about the plausibility of the assumptions can be dispelled.

The trouble is that this methodological practice places too great a burden on the evidence and techniques available for empirical testing. Our means of distinguishing among hypotheses on the basis of empirical evidence are so meager that we must welcome any opportunities for testing, wherever they may arise in the logical structure of a theory. Given the limited kind of tests available for the final propositions of a theory, there is bound to be ambiguity in the interpretation of the test results. If a test indicates rejection, we cannot ascertain whether the fault is with the central content of the theory or with auxiliary assumptions maintained only to make the data relevant. If a test indicates acceptance, we are also faced with ambiguities of interpretation. The result will indicate acceptance of the central proposition only if it is taken for granted that the data meet all the auxiliary requirements of the test. Thus when Friedman finds a negative result, he is led first to look for failures of the data to match his auxiliary assumptions. Ordinarily, Friedman is content to assume that, for a group of families observed at the same time, mean transient consumption and mean transient income are both zero.

When cross-section data fail to accord with the predictions of his theory, he finds the explanation in the failure of this assumption. And he argues that plausible corrections for this failure would eliminate the inconsistency of the data with his theory. But when the results of a test are favorable, Friedman is seldom led to worry about the accuracy of the assumption that the means of transient consumption and income are both zero.³ Moreover, Friedman adopts quite a different assumption when he comes (Chapter V, Section 3(b)) to test his hypothesis on aggregate time series. There he no longer assumes that mean transient income is zero except in unusual years like 1944. On the contrary, he identifies mean permanent income for the whole nation with a weighted average of past mean measured incomes; thus only if it should happen that current mean measured income equaled this weighted average would mean transient income be zero. In particular, it would not be zero in 1917, 1935-1936, 1941 and other budget study years; nor would it be the same in all these years.

Another example is the treatment of age, wealth, size of family, and other variables that Friedman thinks may influence the propensity to consume, although they are extraneous to his central hypothesis. Constancy from one cross-section to another in the average pro-

³ In Chapter IV, Section 2(a) Friedman argues, plausibly, that the failure of 1944 to fall in place in Figure 4 may be explained by nonzero transient mean income and consumption in that year. This explanation raises a question about the apparent congruence of 1917-1918 observations with expectation, and Friedman has to look for another *ad hoc* explanation.

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pensity to consume supports Friedman's hypothesis only if the extraneous variables have in fact stayed the same or changed in such a way as to offset one another. In his discussion of the secular constancy of the aggregate average propensity to consume in the United States (Chapter V, Section 1b), Friedman argues that there have been offsetting changes in the relevant variables. Among the factors he cites as important in the direction of reducing the propensity to consume is the secular reduction in average size of family. However, the budget data Friedman uses as the principal evidence for his hypothesis are data in which households are grouped together regardless of size of family, age, wealth, location, and other characteristics. The failure to take account of these variables has unknown but potentially serious consequences for the calculations Friedman cites in support of his hypothesis.

Economic theorists have traditionally shown a disposition to use basic concepts and basic axioms that cannot be observed or tested directly, but it has remained for Friedman to claim that this disposition is a virtue rather than a fault or, at best, a regrettable necessity. Given Friedman's preference for ingenious indirect tests over simple direct tests, it is not surprising that he assumes without question that his concepts of permanent and transient income are unobservable. He does not include in his list of potential tests of his hypothesis the possibility of asking individuals questions about their long-range and short-range income expectations. If such questions were asked of the same households for whom consumption and current income were measured,

some fairly direct tests of Friedman's central hypothesis might be possible. To this proposal it may be objected that many respondents would not have sufficiently well-formed expectations to give useful answers. If this objection is correct, one would also have to doubt that their expectations are sufficiently well formed to influence their consumption.

The data on which Friedman tests his hypothesis must in virtually every case be regarded as sample observations from some statistical universe. Consequently allowance should be made for chance variations in observed statistics in judging whether they confirm or refute the hypothesis. Logically Friedman's tests are of two kinds. Sometimes his theory implies that two statistics are estimates of a common population parameter, or that a statistic is an estimate of a parameter with an *a priori* known value. His most interesting and compelling tests, for example, concern the agreement between two methods of estimating the proportion of variances of measured income due to variance of permanent income, one method depending on the apparent elasticity of consumption with respect to income in budget data, the other depending on the income histories of identical households. In such cases, Friedman quite properly demands less than exact agreement. He claims in effect that the agreement is close enough so that he does not have to reject the hypothesis that the difference is due only to sampling variation. Unfortunately, he does not support such claims by any calculations of sampling errors. In a different set of cases, Friedman's theory implies that two statistics are estimates of parameters that differ in value in a specified

CONCLUDING COMMENT

direction. Thus many of his tests concern the proposition that the consumption-income scatter of a group is less steep the more homogeneity of permanent income there is within the group. Once two groups have been ranked by this criterion of homogeneity, Friedman is testing the hypothesis that the slopes of the consumption-income relation are the same, against the alternatives that the slope for the more heterogeneous group is larger than the other slope. In these cases, Friedman is looking for statistically significant differences, to enable him to reject the null hypothesis. But here again his failure to compute any sampling errors makes it impossible to judge whether the differences he displays are significant or not. It is surprising that Friedman, who in other contexts—even within this same book—is a sophisticated statistician, should not have viewed the problem of testing his permanent income hypothesis against empirical evidence as a statistical problem.

One of the great appeals of Friedman's hypothesis, both to author and to reader, is its simplicity. We should certainly welcome any single principle that can reveal unity and system in data that otherwise appear variable and chaotic. According to Friedman, the labors of investigators who search for complex multivariate explanations of consumption are misguided. But a considerable multivariate effort would be needed to test Friedman's own hypothesis with proper allowance for the variables that ought to be held constant. Until such tests are made, I doubt that the hypothesis has been sufficiently proved so that it might be used, as Friedman suggests, to derive from consumption-income relations in budget data information about the variability of permanent and transient incomes. It is certainly better to be simple than complicated. But is it better to be simple than right?

COMMENTS ON "A THEORY OF THE CONSUMPTION FUNCTION"

Theodore Morgan

The Friedman equations, in this summary chapter, are attractively simple only in their form, not in their content.

(1) The fraction k , that permanent consumption bears to permanent income, depends on "any factors" that affect the choice between consumption and saving. Many a complication is therefore implicit, smuggled into k .

(2) The equations can be at best only partially operative, since the permanent and transitory elements of consumption and income cannot be surely separated

from each other, and since expectations of income are a fragile and varying thing. The only solid information we have is actual total income and consumption. (3) The distinction between permanent income and consumption and the transitory is shadowy, when "permanency" is taken as over a year, or maybe three or more years, or perhaps something else.

Nevertheless, I would predict a good life expectancy for this approach because it *seems* simple.

FURTHER COMMENTS ON "A THEORY OF THE CONSUMPTION FUNCTION"

Irwin Friend

Professor Friedman has made an impressive contribution to the literature on the consumption function. His book is notable for its careful development of a new theory, the detailed spelling out of implications of this theory, and the testing of these implications against an imposing array of empirical findings.

Mr. Friedman adduces the superiority of his new theory of the relation between income and consumption or saving on two grounds: its simplicity, and more important, its ability to explain a wide variety of saving phenomena.

I am inclined to question that this new theory is in effect simpler than most alternative theories. The basic equation that $c_p = k(i, w, u)y_p$ is not appreciably simpler than other theories unless it is assumed that k is constant. That Mr. Friedman is not willing to make such an assumption is suggested by his statement that the principal task is to find the major determinants of k and to measure their influence.

In this connection, the constancy of the aggregate k which Mr. Friedman says is implied by time series data (1897-1949) is puzzling in view of wide changes in the interest rate and,

perhaps more significant, in the ratio of at least the liquid asset portion of nonhuman wealth to income, as well as in other major factors supposedly determining k . Mr. Friedman discusses some institutional changes in the economy relating to i , w and u that might have offsets in their effect on k . However, while it is quite conceivable that such an offset might have characterized the period as a whole, it seems highly unlikely that the institutional changes he discusses would not have had widely disparate effects on k in different periods.

Turning to the second and more important point, I have the feeling that the evidence that Mr. Friedman gives as to the superiority of his theory as against alternative theories is somewhat more ambiguous than he concludes, though of course this is something each analyst will have to decide for himself. I shall just enumerate a few instances in which I do not see how Mr. Friedman's theory explains the facts.

Since the ultimate purpose of theory is prediction, it is noteworthy that this new theory does not appear to explain

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the relatively high average rate of saving in the five years following 1950, a period subsequent to that covered by the data Mr. Friedman examines. It is my impression that various other absolute income hypotheses do a better job in this respect, though their performance in the immediate postwar period was less satisfactory.

One of the important saving phenomena that Mr. Friedman explains with his new theory is the relatively high average saving propensities of farm families indicated by consumer surveys since 1935-1936. "Two characteristics of farm families are the keystone of the preceding analysis of their consumption behavior: their decidedly lower average income, at least for the years studied, which accounts for generally lower consumption at given measured incomes; and the entrepreneurial source of their income, which helps to account for both the lower income elasticity of consumption and the lower average propensity to consume by making transitory components a relatively important source of income variation." It seems legitimate to raise the question how Mr. Friedman rationalizes these findings with another body of data, viz., the time series estimates for 1897-1949 developed by Raymond Goldsmith, which indicate that the average saving-income ratio for farmers was insignificantly different from zero from 1897 to the mid-thirties as compared with a ratio of over 10 percent for nonfarm households. Apparently, it is only since the mid-thirties that the saving-income ratio of farmers has been higher than that of other individuals. It might further be noted that it seems incorrect, at least on the basis of these figures, to cite "the sharp reduction in the fraction of the population on farms" in conjunc-

tion with the tendency of farmers "to save a relatively high percentage of permanent income" as the major factor tending to increase k for the population as a whole and offsetting other factors tending to decrease k .

I have some difficulty also in understanding Mr. Friedman's conclusion that the comparative results of the 1935-1936 and later consumer surveys confirm his theoretical expectations. The saving rate in the 1935-1936 survey was generally as high or higher in each income bracket (until the very highest, which was based on extrapolation rather than on survey results) than the corresponding rates in the 1941 and postwar surveys. It could be argued that the permanent income hypothesis should have indicated an opposite result since a given income bracket in the relatively depressed 1935-1936 period presumably implied a much higher permanent income status. I realize that other assumptions can be made which make these findings consistent with the permanent income hypothesis, but I wonder whether they are any more plausible.

In my opinion, perhaps the most useful tests that can be made of the theory would be to check two key assumptions against the empirical evidence: first, the assumption that transitory components of consumption and income are uncorrelated; and second, that top income groups save about the same proportion of their permanent income as lower income groups.

Some evidence against the first assumption is supplied by replies to the Federal Reserve-Michigan Survey of Consumer Finances by persons receiving sizable National Service Life Insurance dividends during 1950. Over one half reported using the dividend exclu-

sively to purchase goods and services whereas the permanent income hypothesis would presumably imply that such windfall gains are saved. This test is unsatisfactory both because durable goods expenditures are considered as consumption and because it is desirable to check what people say they do against objective data; moreover, it is necessary to compare the saving behavior of this group with that of otherwise similar groups in the population. Another weak test is provided by Survey of Consumer Finances data indicating that persons cashing their terminal leave bonds in 1947 when the bonds first became redeemable reported that they used their receipts to buy non-durable goods in 32 percent of the cases, durables in 26 percent, and saving and other purposes in the remainder of the cases. Those receipts may or may not have been regarded by their recipients at the time as a transitory component of their income.¹ I hope that a number of more careful tests of the disposition of windfall gains can be carried out in the Study of Consumer Expenditures sponsored by the University of Pennsylvania in conjunction with the Bureau of Labor Statistics.

The admittedly deficient evidence available, showing very much higher saving ratios of the top income groups classified by annual incomes, also casts some doubt on the second implication of the permanent income hypothesis referred to above. I am inclined to ques-

tion that these results are caused by astronomical saving ratios for persons temporarily in the top income group superimposed on average ratios for those permanently in that group.

If you look at the last three Federal Reserve-Michigan surveys which supplied such information, it appears that the top income group (\$7500 and over) saved more in 1949 than in 1948 and about the same in 1950 as in 1949 though presumably a somewhat larger proportion of the income group in 1949 represented families "permanently" in that bracket. In addition, these surveys point to about the same wide differences in saving characteristics between low and high income groups whose income did not change from the previous year as where income changed significantly.

Again plans have been made as part of the Study of Consumer Expenditures for more satisfactory tests of this critical assumption, implicit both in Mr. Friedman's and other recent consumption theories, that saving constitutes a constant proportion of income when saving and income are appropriately defined. This hypothesis will be tested against the new Bureau of Labor Statistics data for 1950 and 1951 (as well as other data) by using the market value of homes and rent as proxy variables for "permanent" income status, by segregating individuals on the basis of the stability of their income as measured by the change in income from the preceding year and anticipated change in the following year, by deriving income elasticities of expenditure for groups with similar "permanent" components of income and by utilizing data on income and expenditures from one or more continuous postwar samples of respondents.

¹ Similar results implying a net impetus to consumption seem indicated by English data showing the average disposition of windfall receipts in 1952-1953, but again important qualifications limit the significance of these findings. See Lawrence R. Klein, "Patterns of Savings: The Surveys of 1953 and 1954," *Bulletin of the Oxford Institute of Statistics*, May, 1955.

FURTHER COMMENTS ON "A THEORY OF THE CONSUMPTION FUNCTION"

Guy H. Orcutt

I would like to address my remarks to the paper, or perhaps I might more accurately refer to it as a preliminary draft of a book, by Professor Milton Friedman. I found it to be a splendid and stimulating contribution to the theory of the consumption function. While my remarks are designed to raise some questions about this study (this is, I take it, my appointed function) they in no way should be taken as any lack of profound respect for this impressive piece of work. My remarks were prepared in the few days that I have had this monograph in the belief that Professor Friedman both could and would, as is his custom, set the record straight where I had erred. If I had known he would not be here, I would have sought to give my remarks a more balanced and, therefore, less critical tone.

One of the questions that arose in my mind as I read the first two chapters of this monograph was, "What problems in predicting is Friedman really concerned with? To whom would he like his results to be useful? Is he primarily interested in the discovery and

verification of relations that would be useful in predicting useful aspects of consumer behavior on the assumption of no special interference by policy-makers or is he interested in relations which would assist policy-makers in evaluating the probable consequences of alternative lines of action? Or could he have some other objective not related to prediction of any sort?" To this type of question I have not yet arrived at as clear an understanding as I could wish for. It is of course true that any piece of research may be found useful for many purposes in addition to those envisaged by the scientist in question, and this may well be true in this case. Nevertheless, since evaluation of any kind of theory meant to be applied to the real world clearly requires some agreement as to what kind of predictions it is supposed to be successful at, I hope that Professor Friedman will be more explicit on this point in the introductory chapters of his final draft.

My uneasiness over Friedman's objectives, or should I say lack of obvious objectives, is only heightened by the almost nonoperational manner in which

he initially defines his basic concepts of wealth, permanent income, and permanent consumption. True, he departs from these early definitions to such an extent that one might wonder why he found it useful to start with them. Nevertheless, I found it strange to find the present wealth of a consumer unit defined to be the sum total of an infinite income stream discounted, at some interest rate, back to the present. I also found it disconcerting to find the consumer unit's permanent income during period one defined as equal to the rate of interest multiplied by his wealth as defined above. There is nothing logically contradictory about these definitions, I am just puzzled by the fact that these variables cannot, in principle, be known until long after the event even by the consuming unit involved. Nor is anything even remotely resembling them ever measured in the subsequent statistical work. I am not even sure what use they would have if they could be measured. In any case, it is clear that a good many steps would be needed before applying any conclusions about the relation of permanent consumption to permanent income as defined above to the range of problems that occurred to me.

Fortunately, Professor Friedman does not adhere to these early definitions but says that the data should be used to show us how to decompose measured income and consumption into its permanent and transitory components. And with the notion that the significance of any level of income depends in part upon the extent to which it is regarded by its receiver as likely or not likely to be repeated in future years, I am in complete accord and deem this emphasis as one of the many highly

commendable aspects of this study.

A second, or perhaps it is a third, criticism that I would make has to do with Friedman's treatment of what surely is a multivariate situation as though planned income were the only relevant explanatory variable. To be sure Friedman's formulation of the problem is multivariate for he does set up the hypothesis that $c_p = k(i, w, u)y_p$ and from time to time he finds it convenient to remember that k is not really a constant. In fact, in reality k may not even be independent of y_p , which indeed could be very troublesome. Nevertheless, throughout most of his analysis, and even when discussing cross-sectional data, Friedman proceeds as though k were in fact a constant. Since k can hardly be considered a constant under these circumstances, I think application of the analysis to cross-sectional budget studies should receive some reexamination. It is true that at the beginning of this section Friedman asks us to "Suppose that we have observations on consumption and income for a number of consumer units, for all of whom the k [of Equation (2, 6)] can be taken to be the same." However, this cannot be very well supposed in the subsequent applications, and it does appear to be a supposition of some importance in Friedman's derivation of the effect of transitory components in biasing estimates of the marginal propensity to consume.

By explicitly assuming that certain expected values are equal to zero, i.e.,

$$E(y, y_p) = E(c, c_p) = E(y, c_t) = 0,$$

and by implicitly assuming that k is a constant, Friedman is able to breathe some real life into his distinction between the permanent and transitory

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components of income and consumption. But I have some doubts about these assumptions, since I would imagine that what consumer units expect their future income to be may very well be positively correlated with the transitory component of income, human nature being what it is. I would also expect transitory consumption to be positively correlated with transitory income. However, let us leave these considerations aside. What we then have is essentially the same well-known model that is involved when we try to estimate an exact linear relation between two variables where both the dependent and independent variables are subject to error. As is well known, errors of the type specified in the dependent variable, c_p , lead to less accurate but still unbiased estimates of the regression coefficient involved. It can also be readily deduced that to bias the estimate of the marginal propensity to consume, from above .9 down to .7 or below, would require that the standard deviation of the transitory component of income be nearly one half as large as the standard deviation of measured income.

Perhaps such a large transitory component could be considered as conceivable if using the permanent income concept introduced in the first two chapters. It does not seem very likely when one starts regarding permanent income as some kind of two- or three-year moving average as Friedman does when considering aggregate time series. That is, it does not seem very likely even when considering the cross-sectional data relating to individual households. When dealing with aggregate time series for the United States, it seems impossibly high since any transitory components which are even approximately independ-

ently distributed as between households would be effectively removed by the process of aggregating over all households.

It seems reasonable to accept the point of view that a constant average propensity to consume over a substantial period of time is rather damaging to some hypotheses about consumer behavior. However, I couldn't help wondering how much support this constancy really gives to a hypothesis like Friedman's, which may be consistent with it but certainly doesn't require it. In fact, as I interpret the Friedman hypothesis, I would have thought that with stable income and population it would require the average propensity to consume to move toward unity as wealth relative to income gradually grows because of saving. Perhaps the fact that the average propensity to consume is apparently substantially lower in the United States than in England or Sweden is not so much a result of differences in the relative size of transitory components of income as it is a consequence of a more rapidly growing income and population in the United States than in England and Sweden.

For the most part, I find myself in strong agreement with Friedman's research proposals. In particular, it is essential that much more emphasis be placed on obtaining data about wealth. It also is highly important that we obtain a great deal more reinterview data from identical households or other small units. I doubt if many would dispute the desirability for many more small, special purpose surveys and reinterview surveys drawn from well-selected strata.

In addition to the above suggestions, which are all aimed at obtaining more useful data, we need some way of im-

proving our selection of over-all objectives and subsequent working hypotheses. We also need improvement in the testing, reformulation, and retesting of hypotheses. One way of doing this would be to set up a fairly permanent team of five to ten experts who would retain their main institutional bases of operation but be provided with significant free time for private and joint work in the area of household behavior. This team could then be given the job of

- a. Periodically ascertaining the major types of prediction worth seeking.

- b. Selecting and/or formulating relevant working hypotheses.
- c. Finding ways and means of testing these hypotheses.
- d. Following up on the testing reformulation, retesting, etc.

If such a team were gotten together, it is to be hoped that they would place emphasis on considering humans as more than just consumers, since many significant actions in this area may not be independent of actions taken in other areas relating to such things as family formation, location, education, etc.

REPLY TO COMMENTS ON "A THEORY OF THE CONSUMPTION FUNCTION"

Milton Friedman

I am much indebted to my critics for both the content and the constructive tone of their comments. Fortunately, their comments were available to me before the monograph went to the printer, so I was able to take advantage of them in making final revisions. Limitations of time and competence, however, prevented my meeting all the criticisms that seemed to me valid. In addition, I am unpersuaded by some. So I welcome this opportunity of commenting further on them.

1. I quite agree with Professors Friend and Orcutt that the rough secular constancy of k^* , the ratio of aggregate consumption to aggregate income, deserves much fuller study than I was able to give to it. But on one point made by both, though in somewhat different forms, I have serious reservations. Friend refers to the "wide changes . . . in the ratio of at least the liquid asset portion of nonhuman wealth to income," implying, I take it, an increase; Orcutt argues "that with stable income and population" my hypothesis "would require the average propensity to con-

sume to move toward unity as wealth relative to income gradually grows due to saving."

My reservation with respect to Friend's comment is, partly, that the change he refers to may not in fact be a secular change but simply a temporary reflection of large positive transitory components of income during wartime; partly, that this change needs to be viewed in the context of nonhuman wealth holdings as a whole and largely reflects a substitution of one form for another.

My reservation with respect to Orcutt's comment is partly its internal consistency, partly—a point he also recognizes—its applicability to dynamic conditions. Stable income and population presumably imply zero net saving, and so no change in wealth. On the other hand, under dynamic conditions of growing income, what we call "saving" is only part of the total amount devoted to increasing productive capacity. Another part is devoted to adding to human capital, via expenditures on raising and training children, on im-

proving skills, on advancing knowledge. When net "saving" is occurring in the one form, it is likely to be occurring in the other as well. In consequence, there is no presumption that saving necessarily raises the ratio of what we generally call wealth to income. Indeed, the empirical evidence seems to me to run the other way. Economic growth apparently involves a rise in the fraction of investment broadly conceived that is embodied in human capital, and consequently is accompanied by a *decline* in the ratio of nonhuman wealth to human wealth.

2. I have not had an opportunity to test Friend's comments about the "relatively high average rate of savings in the five years following 1950," though it would clearly be desirable to do so.

3. Friend argues that Goldsmith's data contradict my finding that farm families have a relatively low average propensity to consume. His comments led me to reexamine Goldsmith's data and to insert some additional material into the final manuscript. My final conclusion is that Goldsmith's data do not contradict my finding; Friend's impression that they do is attributable to Goldsmith's exclusion of capital gains from savings. While this exclusion may be justified for aggregate savings, it tends, as Goldsmith points out, to distort the distribution of savings by sectors. When allowance is made for this effect, Goldsmith's data, if anything, support my original finding.

4. Like Friend, I find the evidence on the disposition of windfalls from the Survey of Consumer Finances unsatisfactory. Unlike him, I find the evidence he cites on savings ratios in the top income groups irrelevant, because, as I show in the monograph, the results

he cites are predicted by the permanent income hypothesis and fully accounted for by it. On both counts, however, I look forward to the additional evidence that will be forthcoming from the Pennsylvania study.

5. Orcutt asks, "What problems in prediction is Friedman really concerned with?" I must confess that I am somewhat at a loss how to answer any more satisfactorily than I do in the monograph. As I see it, the problem is to predict the effect of differences in circumstances on the amount that groups of consumer units devote to current consumption and the amount they seek to add to or subtract from their nonhuman wealth in specified time periods. The differences in circumstances may be the result of explicit acts of policy or come about without explicit action; if the source matters, a satisfactory theory should allow for such an effect; the only other way in which, so far as I can see, concern with policy enters or should enter, is in suggesting the significance of the particular problem. Of course, the differences in circumstances explicitly considered tend to be those that have occurred or are deemed likely to occur; the most fruitful use and test of the theory will tend, however, to be in connection with novel differences in circumstances.

I have emphasized "groups" of consumer units because, as in most of economics, our concern is not with the individual unit as such. We use statements about individual units as a step toward getting results for groups, or as a simple way to describe our theory for groups, but we do not expect these statements to yield good predictions about idiosyncratic behavior; we want them to cover only those elements of

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individual behavior that are common to many individuals and do not cancel out. The particular composition of the group may vary widely, and, indeed, a satisfactory theory will itself specify what characteristics are relevant in forming groups.

I have restricted the problem to the amounts added to or subtracted from nonhuman wealth, to what we ordinarily call consumption and savings, because this is all I have been able to deal with. As my earlier comments indicate, however, it seems to me both possible and highly desirable to extend the scope of the analysis to cover expenditures on all forms of wealth.

6. Orcutt questions my treatment of k as the same for different individuals in cross-section analysis. I am puzzled by this criticism. In the first place, much of the cross-section analysis is devoted largely to isolating differences in k —the comparisons of countries, over time, among occupations, and by race are examples. In the second place, and more important, a major feature of the permanent income hypothesis is precisely that it explains many phenomena that hitherto have been regarded as produced by differences in or nonhomogeneity of consumer tastes—both of which imply differences in k —without introducing such differences. I regard this feature as one of the chief virtues of the permanent income hypothesis; Orcutt apparently regards it as a defect.

7. I am even more puzzled by Orcutt's expression of doubt that the transitory component of income can be sufficiently important to "bias the estimate of the marginal propensity to consume, from above .9 down to .7 or below." This is surely not a matter about which conjecture and speculation are necessary

in the light of the amount of empirical evidence offered on precisely this point in the monograph. I readily grant that there are many points in respect of which the evidence is far from conclusive; but this is hardly one of them.

8. Tobin's comments on the concept of permanent income are highly pertinent and his criticism of my discussion largely justified. I have been led by his comments to insert a fuller and more explicit exposition of the concept in the final version, but I cannot say that I am even yet fully satisfied with it. My difficulty is, however, somewhat different than Tobin's. Despite his comments, I remain of the view that the dichotomy between permanent and transitory components should be set up conceptually in such a way that the precise dividing line between them can be regarded as a parameter to be estimated from the data—if only because it seems to me so plausible and consistent with so much evidence that a different dividing line is appropriate for different purposes. The fuller exploration of alternative formulations called for by Tobin is eminently desirable, not in my view, to permit a single one to be chosen *a priori*, but to clarify the kind of empirical evidence relevant to a choice and to illuminate the meaning of the division arrived at empirically.

My chief difficulty at the moment is how to interpret the time period used in the empirical counterpart to permanent income. For want of a better word, I have referred to the consumer unit's "horizon," and estimated it from the empirical data as approximately three years in length. But "horizon" here means something very different from what it usually does. In particular, the concept is definitely not to be inter-

preted as "a moving average of observed incomes" for a three-year period. As it has generally been used, "horizon" implies a cutting-off point—that a consumer does not look beyond three years, if that is the length of his horizon. As I use it, it means that this is the dividing line between effects he considers transitory and those he considers permanent; that he will not adjust his consumption pattern to actual or possible changes in circumstances except as these can be expected to affect his consumption possibilities for a period longer than three years; and hence that he definitely does look beyond three years. His permanent income for a three-year period may differ from his average measured income for those three years just as the expected value of the mean of a sample of three observations may differ from the observed mean of a specific sample.

9. The proportionality of permanent consumption to permanent income cannot, of course, be demonstrated by what Tobin refers to as "a glib dimensional argument"; it is an hypothesis that seems to fit all the data I examined but that may yet, of course, be inconsistent with other data and so require revision. At the same time, I do not believe that the dimensional argument is quite as irrelevant as Tobin suggests, though my wording of it may be defective. Take his example of the ratio of hours devoted to leisure to hours devoted to work and its relation to the return per hour devoted to work. Expressed as hours, the numerator and denominator are in the same units, and their ratio a pure number, as Tobin says. But in a deeper sense, the numerator and denominator stand for different things; the economic dimensions of the ratio, as it were, are

precisely those of the real wage rate: "work" is directed at acquiring goods as an alternative to leisure time; the numerator is to be interpreted as hours devoted to getting goods; the denominator, as hours devoted to leisure hours; the ratio is economically in terms of goods per leisure hour, which are the dimensions of the wage rate. The situation is quite different with the ratio of permanent consumption to permanent income; the numerator is value of a stream of current services; the denominator is the value of a stream of the same components; the only difference is that the denominator is affected by streams to be consumed in the future. The physical content of the streams cancels out in the economic as well as obvious dimensional sense. What is left is a possible difference in time: now versus the future, which is the dimensional content of an interest rate, and entirely different from that of an absolute level of income.

10. Tobin is quite right that virtually all the budget study data that I cite use the conventional definitions of consumption and saving, rather than the definitions I prefer, which would treat the accumulation of consumer durable goods as saving. This is a defect for my purposes. But I cannot agree with Tobin's implication that it is a fatal defect or even a major one. Goldsmith's aggregate data show that net accumulation of consumer durables accounts for only a little more than 10 percent of aggregate personal saving. Though this is by no means a good measure of the importance of consumer durables for my purposes—the fraction of the variance of saving attributable to durables would be more relevant—it does suggest that there is not "such a wide dis-

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crepancy between the concepts appropriate to the hypothesis and those used in the data" to render the evidence irrelevant. My guess is that the exclusion of accumulation of durables from consumption would improve the budget study results but would not make a major difference; that the proper treatment of durables is likely to be more important for aggregate data for which many of the transitory effects for individual consumer units average out.

11. This is but one of several points that Tobin makes to support his statement that "the assumption that the marginal propensity to consume out of transitory income is zero is undoubtedly the most implausible component of Friedman's hypothesis." I have no quarrel either with this judgment or with the specific points he makes. It certainly is possible that temporary good fortune will lead to more intensive use of existing stocks of durables, that wealth or borrowing capacity may sometimes be lacking to finance dissaving, and that temporary consumption needs may lead to temporary increases in income; and this last possibility is a very real one that I had not myself thought of. But Tobin will surely agree that a listing of possibilities on either side can be no more than suggestive. The whole issue is one of their quantitative importance. I have as yet found no empirical data that require for their interpretation the introduction of a positive marginal propensity to consume out of transitory income. And neither Tobin nor any of the other critics cites any. In view of the variety and range of data that seem consistent with a zero propensity, I wonder whether the burden of proof has not shifted somewhat and whether I am unreasonable in attaching essen-

tially zero weight to objections on the grounds of intuitive implausibility. I hasten to add that I do not regard the evidence I present as conclusive, and shall not myself be surprised if at some later date it becomes desirable to modify the assumption in question. My only point is that it seems to me one should build on success. Let us see how far we can push this perhaps implausible but certainly highly fruitful assumption and modify it only when we find it no longer fruitful.

12. Tobin uses a comment on my general methodological position as a springboard for a number of detailed criticisms. I shall refrain from rising to the tempting bait of the general issue and comment only on the specific points, partly because I have nothing to add on the general issue to what I have written elsewhere, partly because I believe that any differences between us on the specific points have little to do with any difference on the general methodological issue.

13. Tobin is quite right that when an observed result appears to deviate from the result predicted by theory, we will always seek first to see whether we may not have applied the theory incorrectly whether the result is not "really" in agreement with the theory when it is "properly" interpreted; whether, as Tobin puts it, the fault is not "with auxiliary assumptions maintained only to make the data relevant." And he is also right that this makes for ambiguity in the interpretation of tests. This is inevitable and is a common feature of all scientific work. I do not see how it can be or that it should be avoided; it is simply a particular manifestation of the impossibility of achieving certainty in scientific work. But Tobin does not

carry his analysis far enough. One must distinguish sharply between tested and untested explanations of apparent deviations between observation and expectation. A common failing, particularly in economics, is to assert that a particular deviation might be explained by such and such and then leave it at that without further exploration. This casual theorizing provides no test of the explanation and gives no basis for regarding the deviation between observation and expectation as anything other than a failure of the theory. On the other hand, one can go beyond the statement of a possibility and try to determine whether there is evidence for it other than that already embodied in the test under consideration. Such tested explanations deserve much greater confidence. I have no doubt that I have offered untested explanations in some cases; I have, however, tried to avoid giving any weight to them; as it happens, in both cases cited by Tobin in his footnote, I do give some external evidence, though it may not be decisive.

14. Tobin notes in particular that whereas I am generally content to suppose transitory components to average out to zero for budget data, I do not do so for time series data. I am prepared to defend this inconsistency as desirable and appropriate. What is regarded as important must shift with the problem. In an analysis of the behavior of individual consumer units, the mean transitory component may well be negligible relative to the transitory components of individual units. The first order effect is the differences among individuals; it is this effect that we want to analyze. In an analysis of aggregates, the individual differences largely cancel and it is precisely the mean transitory

component that takes the center of the stage.

15. I am most dubious about the value of a questionnaire survey such as Tobin suggests. My main reason for being dubious is a point made earlier (Point 5): the theory is not intended to account for the detailed behavior of separate consumer units but for statistical characteristics of groups of units and so concentrates on those features that can be expected to show up in data for many units. At the same time, such considerations cannot be decisive, and it might be interesting to see what the survey turned up. However, unlike Tobin, I would not regard such a survey as a "direct" test of the "central hypothesis." I would not be surprised if it showed little or no congruence with the hypothesis, and its failure to do so would not affect my confidence in the hypothesis. I would interpret the survey instead as a test whether the hypothesis can be extended to a field for which it was not intended, namely, predicting what people will say and not only what they will do.

16. I plead guilty to Tobin's charge that I have made few formal tests of statistical significance. This is a defect, and I should like to see it corrected. My excuse is entirely practical. With data of the kind I used, it would have been laborious and time-consuming to have made anything like proper tests of significance for each body of data separately, and in many cases the data needed to do so were not readily available. In a first trial of the hypothesis, I preferred instead to rely on bringing together as wide a variety of data as possible and basing my judgments on their concinnity one with another.

17. Tobin closes with the rhetorical

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question, "But is it better to be simple than right?" Like so many rhetorical questions, this one cannot be answered with the resounding "No" it seems superficially to invite, if indeed it has an answer at all. We all of us in our everyday life repeatedly choose the simple and wrong in preference to the complex and right, as when we estimate by eye, no doubt wrongly, the space at the curb before parking, rather than emerging with tape and micrometer to get the "right" answer; or when we use the simple but wrong method of looking at a wrist watch to tell the time rather than getting in touch with the Greenwich observatory to get the "right" time.

As these examples illustrate, when we leave the realm of logic, "right" has no clear meaning. There is nothing easier than being "right" all the time; one need simply say nothing. And there are many ways of saying nothing, including, to get back to economics, complex—or for that matter simple—theories that make everything depend on everything else. Scientific propositions can be wrong, as when they contain errors in logic or arithmetic. But it is not enough that they be "right" in this sense to be useful. They must have acceptable content, which is to say, have implications

capable of contradiction by observation yet that are not in fact contradicted. As among alternatives, it is not even enough that one theory have greater acceptable content than another to be preferable to it; if it is more complex, the additional content must be important enough for the purpose in hand to justify the additional complexity, necessarily a matter of judgment.

In the present instance, the situation is even clearer. So far as I can gather, the alternative more complex theory that Tobin has in mind is the absolute income hypothesis elaborated by the introduction of additional variables such as wealth, liquid assets, age, family size, and so on. This hypothesis is not only more complex; in any form I know about in which it is not obviously contradicted by the evidence it has—or so it seems to me—considerably less meaningful content than the permanent income hypothesis. If it is closer to being "right," it is so only by virtue of saying less.

"Simplicity" and "rightness" are non-comparable terms from different universes of discourse. It makes as much sense to ask whether it is better to be simple than right as to ask whether it is better to be wise than happy.

APPENDIX

SUMMARY MINUTES OF THE DIRECTORS' MEETING OF CONSUMER BEHAVIOR, INC.,

SEPTEMBER 15-16, 1955
ANN ARBOR, MICHIGAN

Those in attendance were:

JAMES M. ANDEREGG, Lippincott and Margulies, Inc.
ALLAN ANGOFF, Executive Editor, New York University Press.
KENNETH BAKER, Vice President, Market Research Corporation of America.
SAMUEL BARTON, President, Market Research Corporation of America.
WARREN BILKEY, Department of Economics, University of Connecticut.
GEORGE H. BROWN, Consumer Research Department, Ford Motor Company.
ANGUS CAMPBELL, Survey Research Center, University of Michigan.
CORA CARTER, Assistant Marketing Editor, *Business Week*.
F. STUART CHAPIN, Professor Emeritus in Sociology, University of Minnesota.
LINCOLN H. CLARK, Professor of Marketing, New York University.
RUSSELL DARLING, Executive Director, Michigan Consumer Finance Association.
ERNST DAUER, Consumer Credit Studies, Household Finance Corporation.
R. E. DAVIS, Business Research Department, Goodyear Tire & Rubber Company, Inc.

ROBERT J. EGGERT, Marketing Research Division, Ford Motor Company.
G. H. ENGLAND, Consumer Research Department, Ford Motor Company.
E. J. ENRIGHT, Graduate School of Business Administration, Harvard University.
HARRY W. FEICK, Merchandise Manager, Hemphill-Wells Company.
ROBERT FERBER, Bureau of Economic and Business Research, University of Illinois.
ROGER GIROD, Department of Sociology, University of Geneva.
HAROLD GREEN, Executive Editor, *Printers' Ink*.
MICHAEL HALPERT, Alderson and Sessions.
SAMUEL P. HAYES, Foundation for Research on Human Behavior.
WILLIAM W. HEUSNER, Marketing Research Department, Pabst Brewing Company.
JOHN A. HOWARD, School of Business, University of Chicago.
GORDON HUGHES, Marketing Research Department, Scott Paper Company.
M. E. JOHN, Department of Agricultural Economics and Rural Sociology, Pennsylvania State University.
GEORGE KATONA, Survey Research Center, University of Michigan.
JOHN B. LANSING, Survey Research Center, University of Michigan.

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RENSIS LIKERT, Institute for Social Research, University of Michigan.

JETSON E. LINCOLN, Market Research Department, Philip Morris & Company Ltd., Inc.

RONALD LIPPITT, Research Center for Group Dynamics, University of Michigan.

VERNON LIPPITT, Marketing Research Services Department, General Electric Company.

FRANCIS E. LOWE, Chief Statistician, Market Research Corporation of America.

TRIENAH MEYERS, Market Surveys Section, Market Development Branch, US Department of Agriculture.

DONALD MILLER, Vice President, Burke Marketing Research, Inc.

EVA MUELLER, Survey Research Center, University of Michigan.

THEODORE NEWCOMB, Department of Psychology, University of Michigan.

ARTHUR C. NIELSEN, JR., Executive Vice President, A. C. Nielsen Company.

GUY ORCUTT, Department of Economics, Harvard University.

D. MAYNARD PHELPS, Department of Marketing, University of Michigan.

ALFRED POLITZ, President, Alfred Politz Research, Inc.

IRVING SCHWEIGER, Department of Marketing, University of Chicago.

ROBERT G. SMITH, Business Research Department, Chrysler Corporation.

SAMUEL STOFFER, Department of Social Relations, Harvard University.

DONALD A. TAYLOR, Department of Marketing, Michigan State University.

FRANCIS H. VAN DEVENTER, Marketing Research Department, General Foods Corporation.

TREVA VAN SOLINGEN, Department of Market Research and Statistics, Miles Laboratories, Inc.

OLIVE VAUGHAN, Consumer Price Section, National Industrial Conference Board.

COLSTON E. WARNE, Department of Economics, Amherst College.

DONALD E. WEST, Marketing Research Department, McCall Corporation.

The business meeting was convened at 7:30 PM September 15 by the President, Stuart Chapin. Mr. Chapin welcomed all those present.

It was voted to dispense with the reading of the Minutes of the previous meeting.

The secretary, Mr. Clark, reported that since the last meeting the organization had been legally incorporated as a membership association in the State of New York. While *de jure* the members of the corporation are the persons who are on the Board of Directors, *de facto* all the persons attending the annual conferences are considered members by the Board of Directors. The Board of Directors and officers at present are:

F. Stuart Chapin, President

George Katona

Theodore M. Newcomb

Guy Orcutt

James Tobin

Donald E. West

William H. Whyte

Lincoln Clark, Secretary-Treasurer

Walter E. Beer, Jr., Counsel

The Treasurer's report was presented and ordered to be attached to the official copy of the Minutes of the corporation.

Mr. Chapin reported that several foundations and companies have been asked for grants to enable Consumer Behavior, Inc., to expand its program. Prospective grantors have indicated some interest in underwriting specific research projects but have not shown much interest in defraying the costs of conferences out of which ideas for worth-while specific projects frequently emerge. He urged the participants, if they found the Conference to be worth while, to advise the Secretary-Treasurer regarding possible sources of funds for

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general overhead expenses. Mr. Warne reported that Consumers Union, which has given several grants to Consumer Behavior, Inc., is finding it necessary to curtail its grants to organizations like Consumer Behavior, Inc., and urged that other organizations contribute.

It was reported that the Ford Foundation has granted \$39,000 for a study of techniques to measure household savings behavior. This project is being administered by Mr. Ferber under the direction of a subcommittee composed of Mr. Orcutt, Chairman, and Messrs. Tobin, Katona, and Clark.

To aid in planning future conferences the participants filled out a questionnaire. The major preferences expressed were:

1. Conferences should be scheduled the second week after Labor Day.
2. The next conference should be held in Ann Arbor rather than Chicago or New York.

3. The conference should last two days and end on the second day not later than 4 PM.
4. The number of speakers per session should be reduced and more free discussion time should be scheduled.
5. Suggested themes for future conferences were:
 - a. Leisure Time
 - b. The Effect of Status on the Buying Decision
 - c. Cross-Cultural Consumption Patterns
 - d. Prediction of Consumer Behavior
 - e. Purchase of "Built-in" Services
 - f. The Decision-Making Process of Consumers
 - g. The Role of Habits
 - h. The Role of Fashion

The meeting was adjourned about 10 PM.

LINCOLN CLARK
Secretary-Treasurer

20
2200